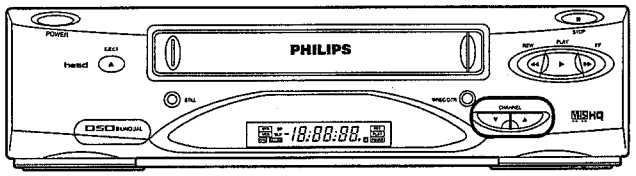
Video Cassette Recorder VR297/55, VR397/55, VR497/55 VR597/55

Service
Service
Service

V19576



VR297/55

Service Manual

Contents

Chapter

1 Disassembly

2 Mechanism adjustments

3 Electrical adjustments

4 Charts and diagrams

5 Parts lists

Specification:

Video recording system:	Rotary 2 - head helical scan system VR297 Rotary 2 - head helical scan system VR397 Rotary 4 - head helical scan system VR497 Rotary 4 - head helical scan system VR597
Antenna input Signal:	PAL B/G, D/K, I, SECAM, K1
Antenna:	VHF/UHF 75Ω external antenna terminal
VHF Output Signal:	UHF channel 36 (adjustable between 32-40) 75Ω unbalanced
Power requirement:	AC 110V – 240V, ~ 50/60Hz
Power consumption:	18W
Operating temperature:	+41°F (5°C) to 104°F (40°C)
Relative humidity:	10% to 80%
Weight:	3.3kg
Dimensions:	360 x 94 x 270mm VR297/55 360 x 94 x 274mm VR497/55 400 x 94 x 280mm VR397/55 SCART 400 x 94 x 280mm VR597/55 SCART

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Published by CFC97PJVM Videq Service Department Printed in the Netherlands © Copyright reserved Subject to modification 4822 726 15586

ht29755.pm5

PHILIPS

TABLE OF CONTENTS

Section Title Page

1. DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART 1-1
1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY ... 1-1
1.3 DISASSEMBLY/ASSEMBLY METHOD 1-1
1.4 CASSETTE HOUSING INSTALLATION 1-4
1.5 SERVICE POSITION 1-4
1.5.1 How to take out the Mechanism and Main board assembly 1-4
1.5.2 Opening on the chassis 1-5
1.6 MECHANISM SERVICE MODE 1-6
1.6.1 How to set the 'MECHANISM SERVICE MODE' 1-6
1.7 EMERGENCY DISPLAY FUNCTION 1-7
1.7.1 How to display record of an emergency fault 1-7
1.7.2 Detail of emergency faults 1-7
1.7.3 How to clear emergency record 1-7
1.8 TECHNICAL INFORMATION 1-8
1.8.1 Syscon CPU pin function (IC701) 1/2 1-8
1.8.2 Syscon CPU pin function (IC701) 2/2 1-9

2. MECHANISM ADJUSTMENT

2.1 PREPARATION 2-1
2.1.1 Precautions 2-1
2.1.2 Check without cassette housing assy 2-1
2.1.3 Manual removal of loaded tape 2-1
2.1.4 Test Equipment 2-2
2.2 MAIN MECHANISM PARTS 2-2
2.2.1 Cleaning 2-3
2.2.2 Lubrication 2-3
2.3 INSPECTION AND MAINTENANCE 2-4
2.3.1 Suggested servicing schedule for main components .. 2-4
2.4 DISASSEMBLY/ASSEMBLY PROCEDURE OF MECHANISM ... 2-4
2.4.1 Precaution before disassembling mechanism 2-4
2.4.2 How to set the exclusive operation mode (MECHANISM ASSEMBLING MODE) 2-4
2.5 MAIN PARTS REPLACEMENT OF MECHANISM 2-4
2.5.1 Pinch Rollar Arm Assy 2-4
2.5.2 A/C Head 2-5
2.5.3 Pinch Plate 2-5
2.5.4 Mode Motor 2-6
2.5.5 Lever Assy,Sub Deck Assy,Capstan Motor 2-6
2.5.6 Control Bracket 2-7
2.5.7 Reel Bracket,Slit disk (take-up) control bracket-2 2-7
2.5.8 Control Plate 2-7
2.5.9 Sub Brake (take-up),Control Cam 2-8
2.5.10 Slide Plate 2-8
2.5.11 Change Lever,Rotary Encoder 2-8
2.5.12 Sub Brake (supply),Tension Band Assy,Tension Arm Assy,Take-up Lever Assy, Slit Disk(supply) 2-9
2.5.13 Take-up Head,Tension Arm Lever 2-9
2.5.14 Guide Rail 2-10
2.5.15 Stator Assembly 2-10
2.5.16 Rotor Assembly 2-10
2.5.17 Upper Drum Assy 2-11
2.6 CHECKUP & ADJUSTMENT OF MECHANISM PHASE 2-12
2.6.1 Precaution 2-12
2.6.2 Loading Arm Assy (supply,take-up) 2-12
2.6.3 Rotary Encoder, Change Lever, Control Cam 2-13
2.6.4 Slide Plate 2-13
2.6.5 Control Plate 2-13
2.7 TAPE INTERCHANGEABILITY ADJUSTMENT 2-14
2.7.1 Tape pattern 2-14
2.7.2 A/C head height & azimuth 2-15
2.7.3 A/C head phase (X-value) 2-16
2.7.4 Tension pole position 2.16

Section Title Page

3. ELECTRICAL ADJUSTMENT

3.1 PRECAUTION 3-1
3.1.1 Required test equipment 3-1
3.1.2 Required adjustment tools 3-1
3.1.3 Color bar signal,color bar pattern 3-1
3.2 SERVO CIRCUIT 3-2
3.2.1 PB switching point 3-2
3.2.2 SLOW Tracking preset 3-2
3.3 ON SCREEN CIRCUIT 3-3
3.3.1 Character position 3-3
3.4 SYSCON CIRCUIT 3-5
3.4.1 Timer Clock 3-5

4. CHARTS AND DIAGRAMS

SCHEMATIC DIAGRAM NOTES 4-1
CIRCUIT BOARD NOTES 4-2
4.1 BOARD INTERCONNECTIONS 4-3
4.2 SYSCON BLOCK DIAGRAM 4-5
4.3 VIDEO BLOCK DIAGRAM 4-7
4.4 VIDEO PRE/REC & AUDIO SCHEMATIC DIAGRAM 4-9
4.5 SYSTEM CONTROL SCHEMATIC DIAGRAM 4-11
4.6 SWITCHING REGULATOR SCHEMATIC DIAGRAM 4-13
4.7 TUNER SCHEMATIC DIAGRAM 4-15
4.8 SW/DISPLAY SCHEMATIC DIAGRAM 4-17
4.9 ON SCREEN SCHEMATIC DIAGRAM 4-19
4.10 MAIN AND A/C HEAD CIRCUIT BOARDS 4-23
4.11 TERMINAL2 SCHEMATIC DIAGRAM & CIRCUIT BOARD 4-25
4.12 REMOTE CONTROL SCHEMATIC DIAGRAM 4-27
4.13 FDP GRID ASSIGNMENT AND ANODE CONNECTION 4-29

5. PARTS LIST

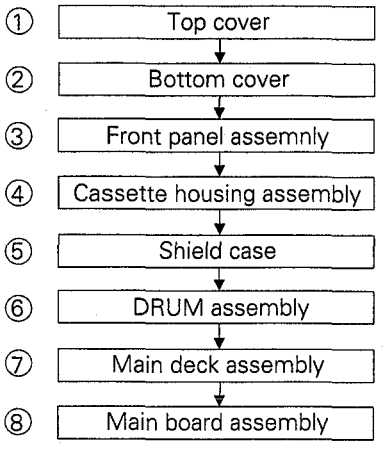
5.1 ACCESSORIES AND ASSEMBLY 5-1
5.2 CABINET AND CHASSIS ASSEMBLY 5-3
5.3 MECHANISM ASSEMBLY 5-5
5.4 ELECTRICAL PARTS LIST 5-5

MAIN BOARD ASSEMBLY 5-5
AUDIO/CONTROL HEAD BOARD ASSY 5-9

SECTION 1
DISASSEMBLY

1.1 DISASSEMBLY FLOW CHART

This flowchart lists the disassembling steps for the cabinet parts and P.C. boards in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally laid.



1.2 HOW TO READ THE DISASSEMBLY AND ASSEMBLY

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	3(S1)	
②	BOTTOM COVER	D2	2(L1),3(L2),7(L3)	<NOTE 1>
③	FRONT PANEL ASSEMBLY	D3	7(L4)	<NOTE 2>
④	CASSETTE HOUSING ASSEMBLY	D4	2(S2),2(S3)	<NOTE 3>
⑤	SHIELD CASE	D5	2(S4), *CN1	
⑥	DRUM ASSEMBLY	D6	3(S5),WR1	<NOTE 4>
⑦	MAIN DECK ASSEMBLY	D7	2(S6),WR2,WR3, WR4(CN703),2(L5)	<NOTE 5>
⑧	MAIN BOARD ASSEMBLY	D8	4(L6), 4(S7)	

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, perform the step(s) in the reverse order. These numbers are also used as the identification (location) NO. of parts Figures.
(2) Part name to be removed or installed.
(3) Fig.No. showing procedure or part location
(4) Indentification of part to be removed,unhooked,unlocked, released,unpluged,unclamped or unsoldered. P = Spring, W = Washer, S = Screw, L = Locking tab, * = Unhook,unlock, release,unplug or unsolder.
(5) Adjustment information for installation

1.3 DISASSEMBLY/ASSEMBLY METHOD

STEP /LOC NO.	PART NAME	FIG. NO.	POINT	NOTE
①	TOP COVER	D1	2(S1), (S2)	
②	BOTTOM COVER	D2	2(L1),3(L2),7(L3)	<NOTE1>
③	FRONT PANEL ASSEMBLY	D3	7(L4), 2(L9) LED BOARD ASSEMBLY (VR397,VR597 only)	<NOTE2>
④	CASSETTE HOUSING ASSEMBLY	D4	2(S3), 2(S4)	<NOTE3>
⑤	SHIELD CASE	D5	2(S5), *CN1	
⑥	DRUM ASSEMBLY	D6	3(S6), WR1, (L5) HEAD CLEANER	<NOTE4>
⑦	MAIN DECK ASSEMBLY	D7	2(S7),WR2,WR3, WR4,*CN703,2(L6)	<NOTE5>
⑧	MAIN BOARD ASSEMBLY	D8	3(L7), 4(S8), (S9) 3(L8)	

<NOTE1>
Loosen the 3 screws (Mark : ▬▷) first, then remove the bottom cover.

<NOTE2>
When reattaching the front panel assembly, make sure that the door opener of the cassette housing assembly is lowered in position prior to the reinstallation.

<NOTE3>
When reattaching the cassette housing assembly, pay careful attention to the switch lever not to make it touch the REC switch knob of the MAIN board assembly from the upside. (If the REC switch knob of the MAIN board assembly is damaged, cassette loading is impossible.)

<NOTE4>
When plugging the connector in, check that the flat wire is inserted properly and fully.

<NOTE5>
- When removing the Main deck assembly only, unhook the two spacers connecting it with the Main board assembly with pliers from the back side of the Main board assembly first, and then remove the Main deck assembly.
- When reattaching the Main deck assembly to the Main board assembly, make sure to set the spacers into the retaining slots respectively.

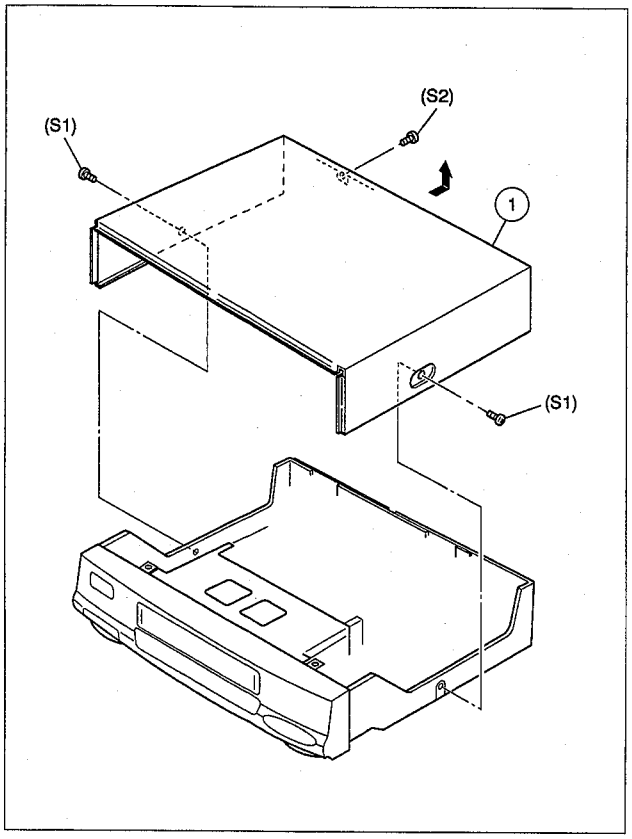


Fig. D1

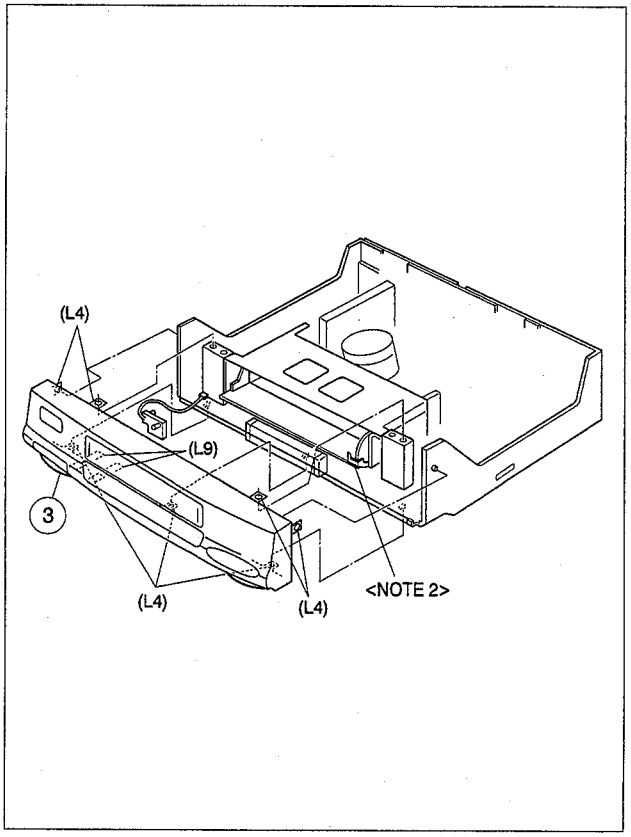


Fig. D3

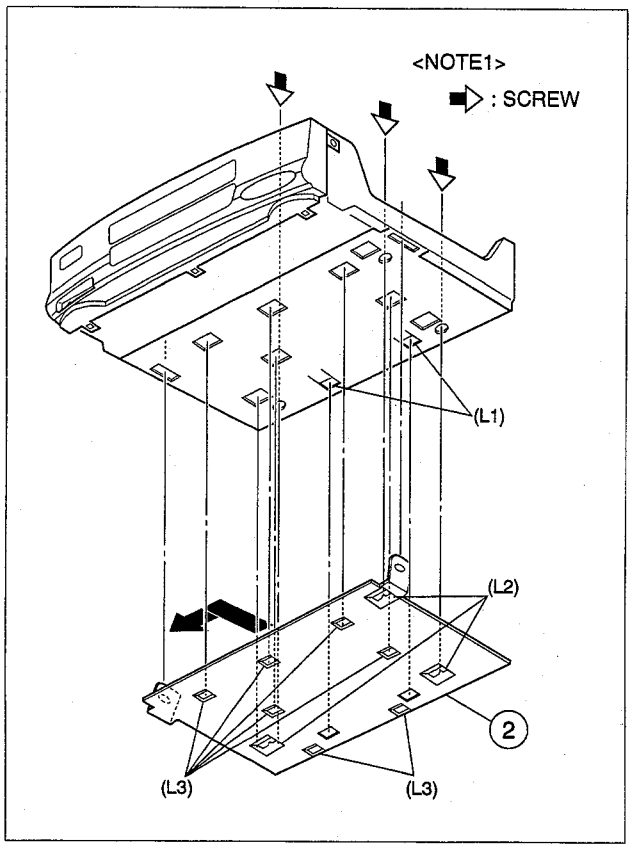


Fig. D2

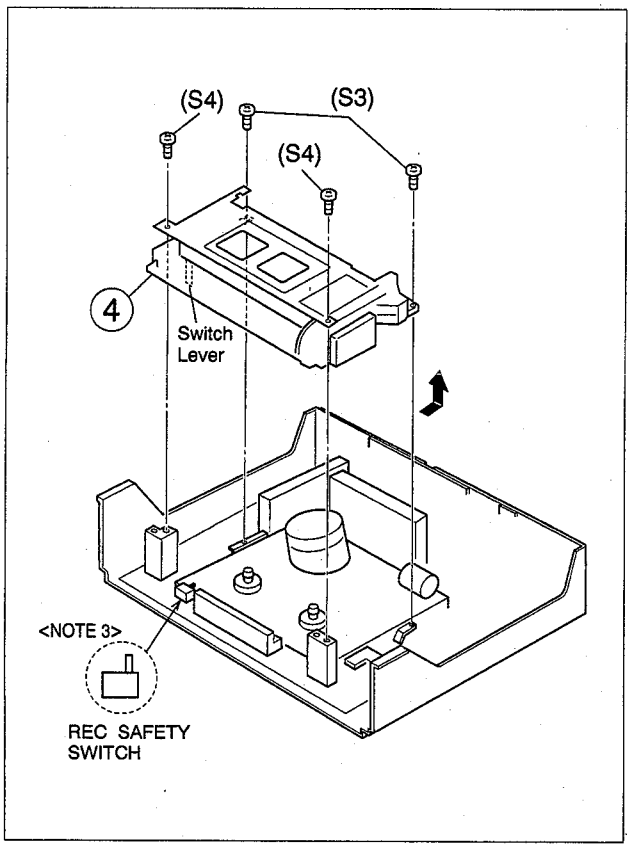


Fig. D4

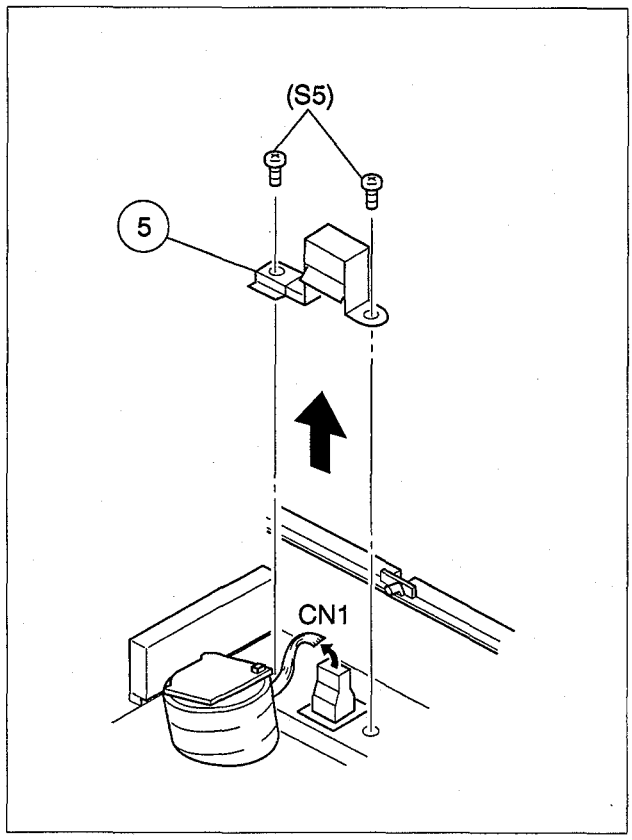


Fig. D5

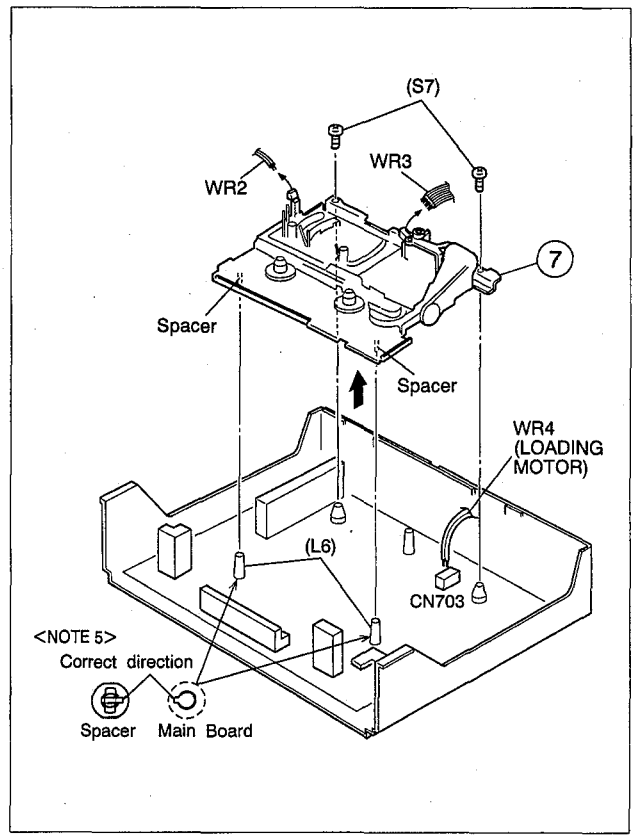


Fig. D7

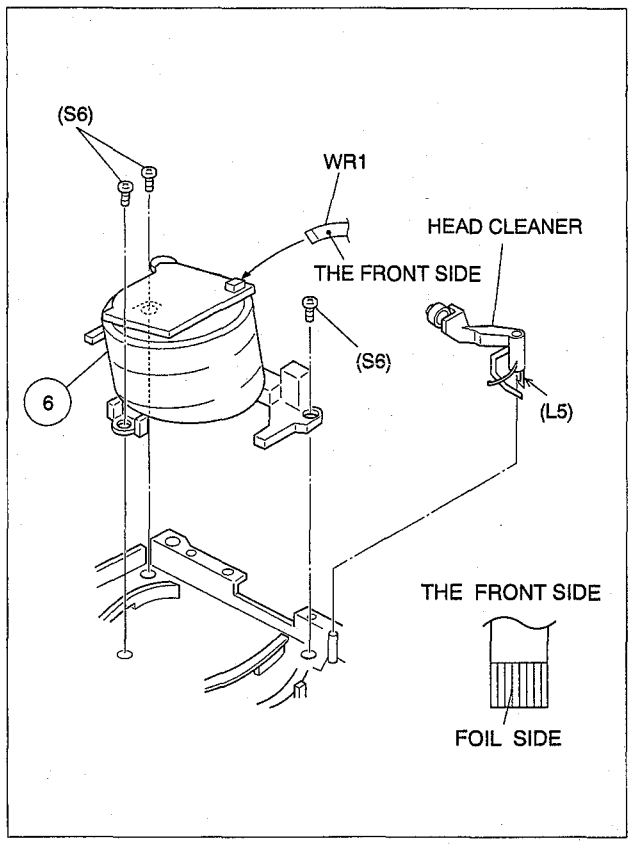


Fig. D6

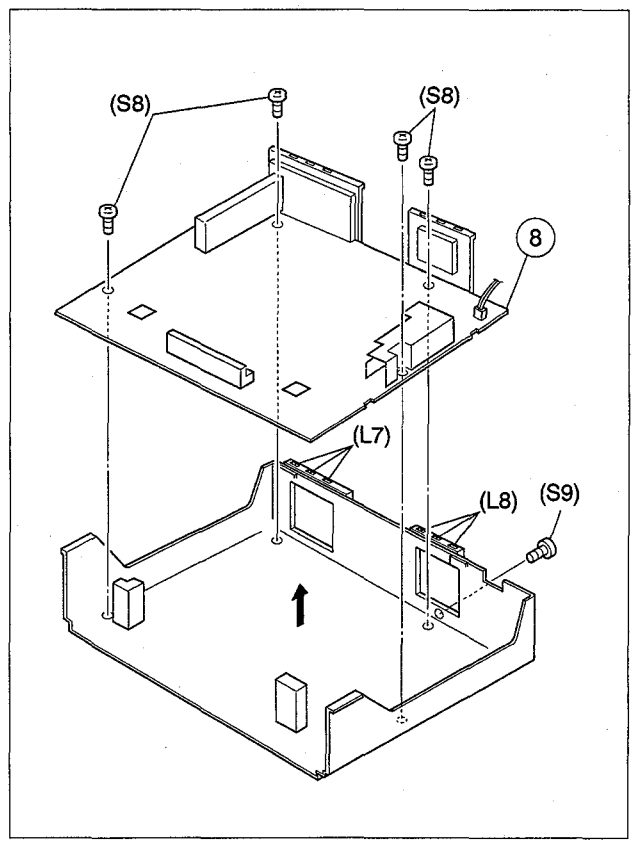


Fig. D8

1.4 CASSETTE HOUSING INSTALLATION

NOTE: *Observe the mechanical phase and position (see figure) when installing the cassette housing assembly. If these are incorrect, the system will not operate properly even when tape is inserted.*

(1) Check that the hole of the control cam are aligned to the deck hole. If necessary, turn the loading motor belt by hand to adjust the position.

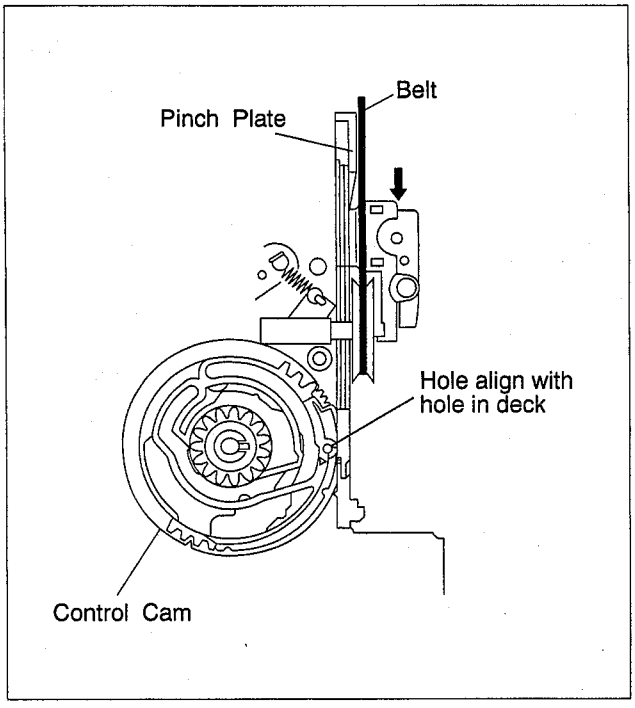


Fig. 1-4-1

1.5 SERVICE POSITION

1.5.1 How to take out the Mechanism and Main board assemblies.

(1) Remove the Top cover and Front panel assembly.
(2) Take out 1 screw Ⓐ ,2 screws Ⓑ and 2 screws Ⓒ as shown in Fig.1-5-1.

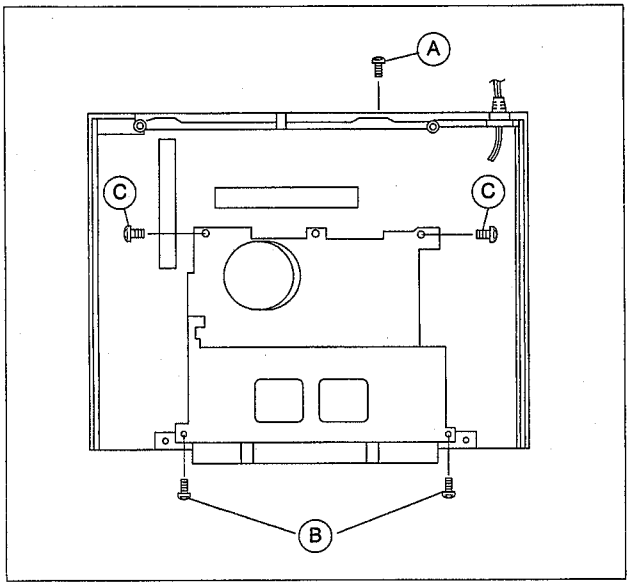


Fig. 1-5-1

(3) Take out 4 screws Ⓓ .
(4) Remove the Mechanism assembly (including Cassette housing) and Main board assembly out of the chassis as shown in Fig. 1-5-2.

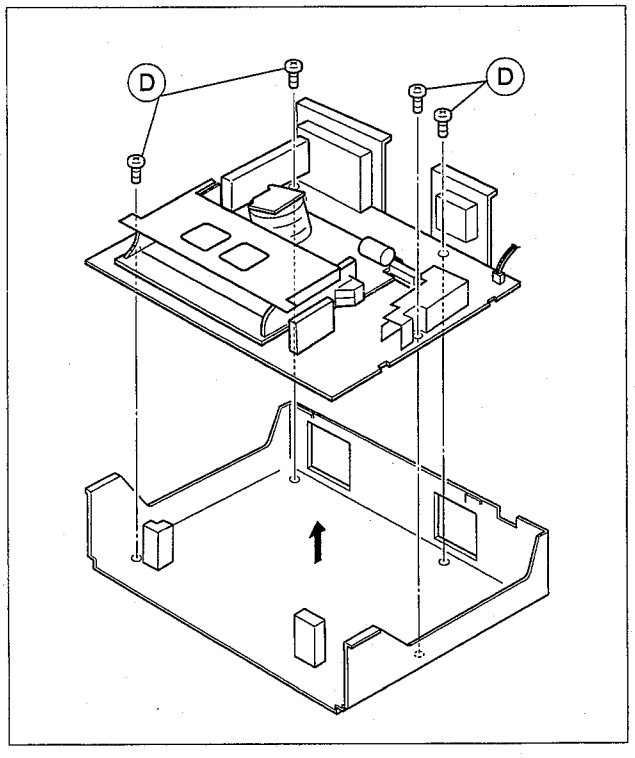


Fig. 1-5-2

(5) Turn over the Mechanism assembly and Main board assembly.
(6) Carry out checks & repairs as necessary as shown in Fig.1-5-3.

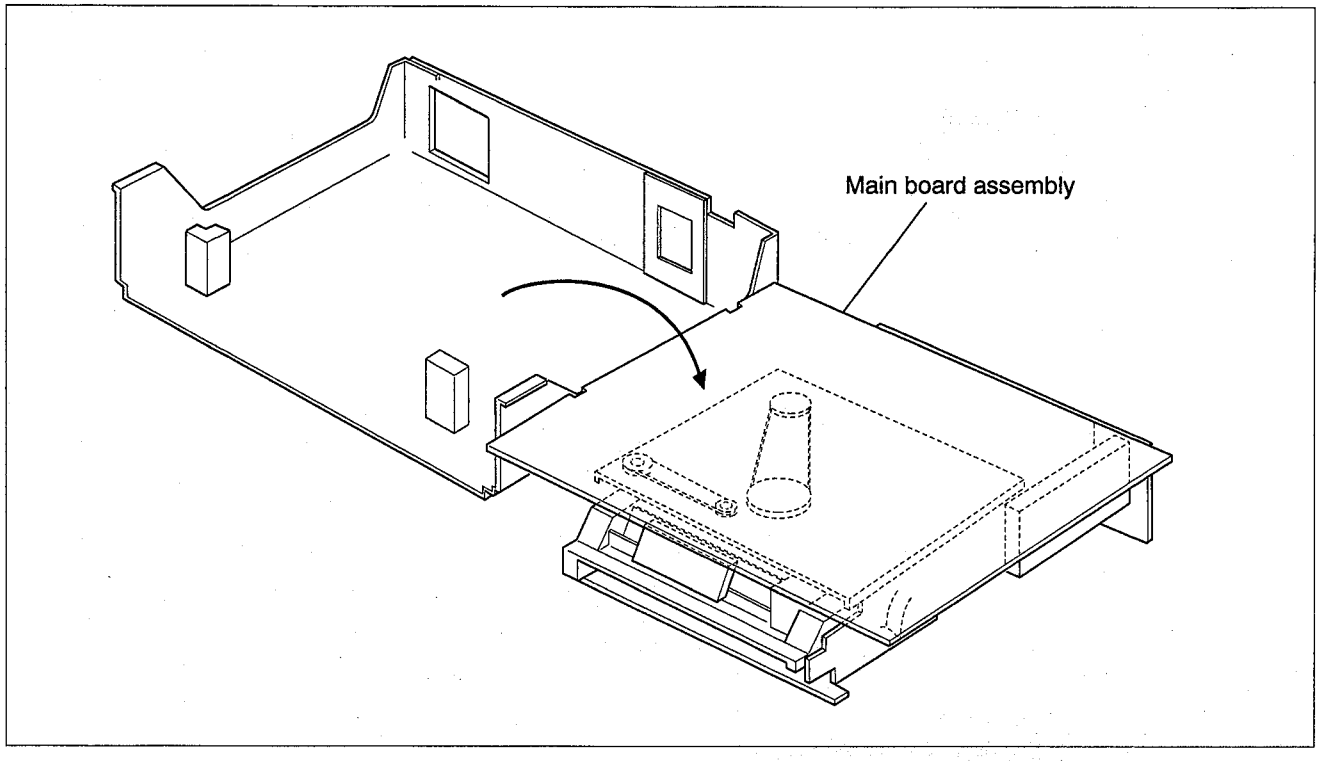


Fig. 1-5-3

1.5.2 Opening on the chassis.
The chassis assembly has openings for easy access to the checkpoints and connector pins as shown in Fig.1-5-4.

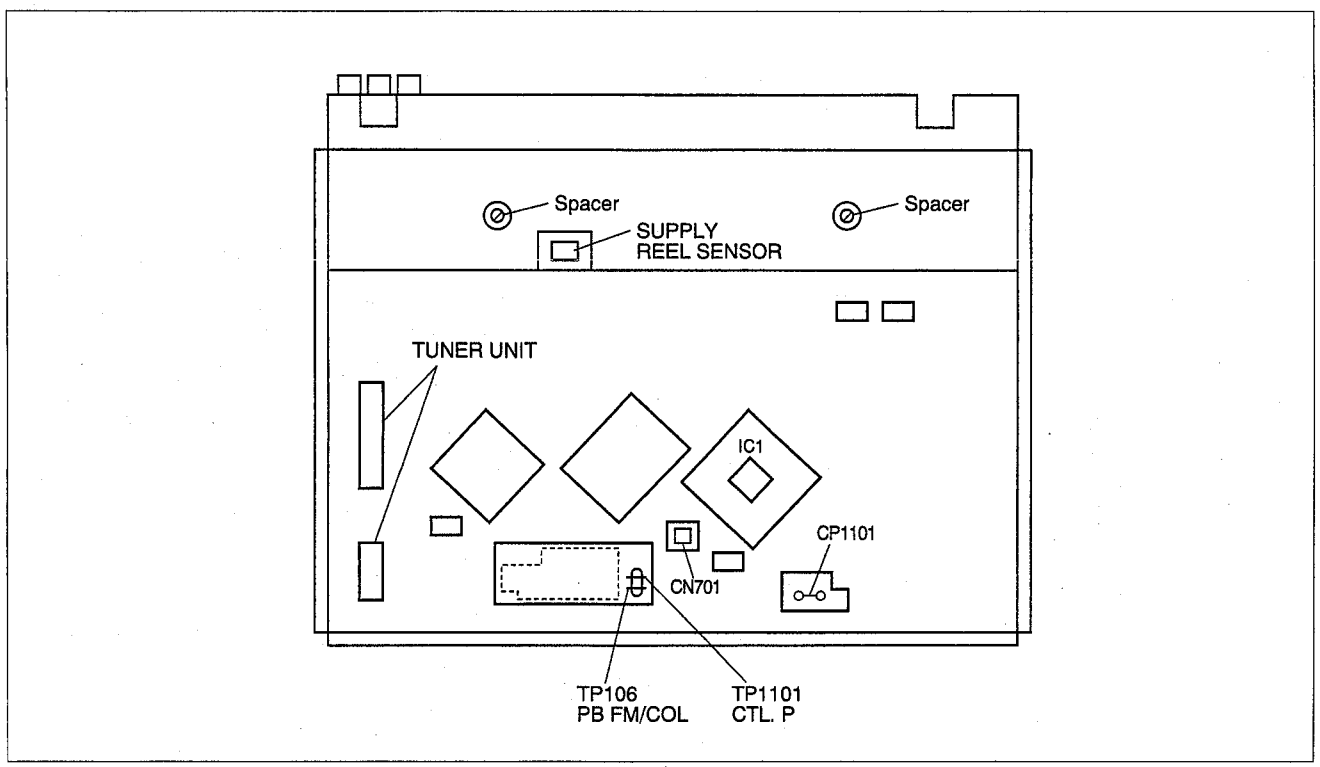


Fig. 1-5-4

1.6 MECHANISM SERVICE MODE

This model has a unique function to enter the mechanism into every operation mode without loading of any cassette tape. This function is called the "MECHANISM SERVICE MODE".

1.6.1 How to set the "MECHANISM SERVICE MODE"

(1) Disconnect VCR from AC.
(2) Remove the Top cover, Front panel assembly and cassette housing assembly. (See Page 1-2, 1-3)
(3) Connect TP GND AND TP1201 (TEST) on the Main board assembly with a jump wire.
(4) Connect VCR to AC.
(5) Press the POWER button.
(6) Select the desired operation modes with the operation buttons or remote controller.

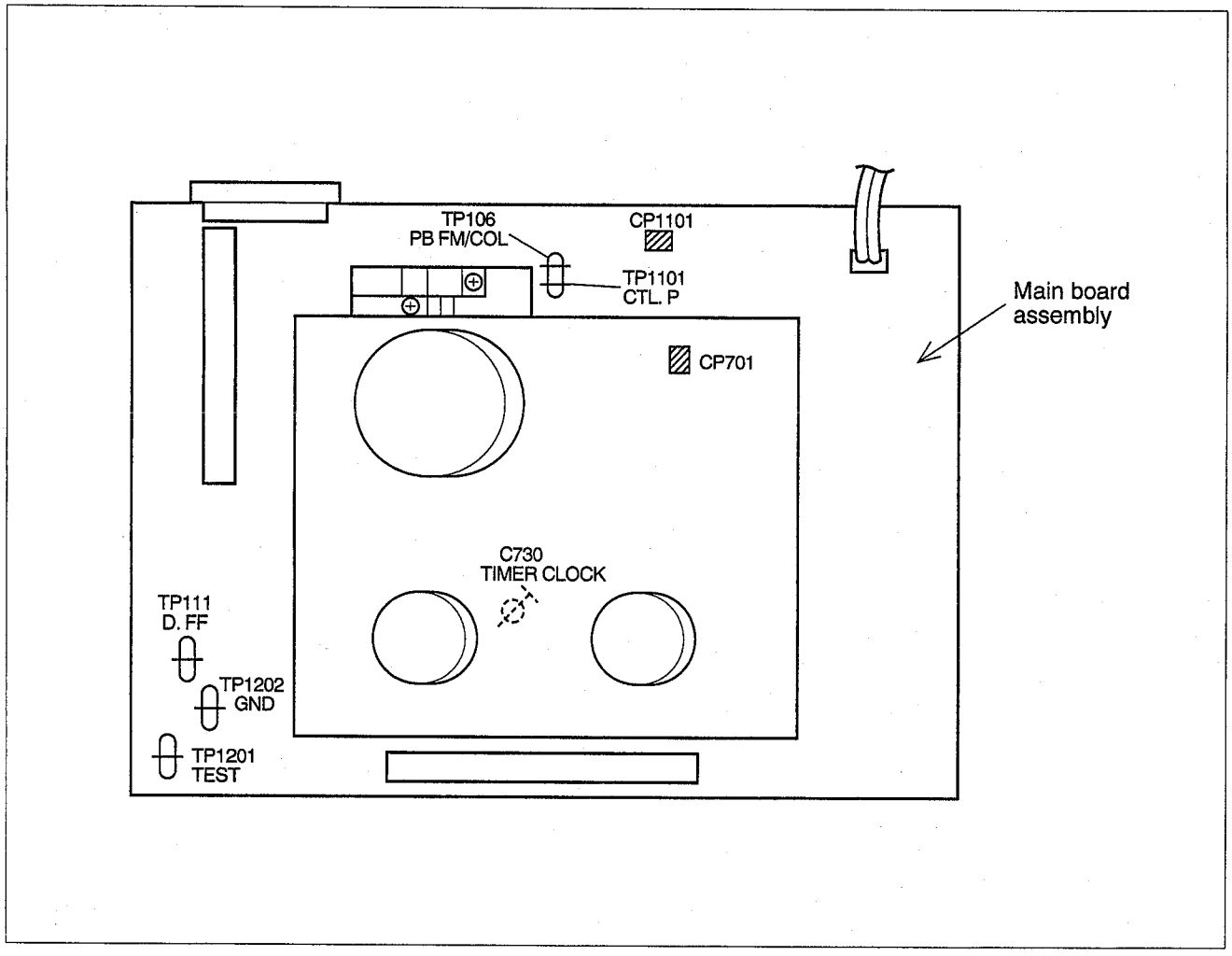


Fig. 1-6-1

1.7 EMERGENCY DISPLAY FUNCTION

This product has the function to store the last two previous emergency faults which can be displayed in the FDP when servicing.

1.7.1 How to display record of an emergency faults

(1) Press "A" button then "N" button of the presetting unit more than 2 seconds. and the two previos emergency faults are shown in the FDP.
(2) Press "N" button of the presetting unit again when return the normal mode.

[Example] E : 01 : 03

- Emergency faults before last
- Emergency faults of the last time

[Example] E : — — : — — ← No record of emergency

1.7.2 Detail of emergency faults

FDP	Symptom	Detect mode	Resulting mode
E : 01	Loading motor rotates for more than 8 Sec without shift to next mode.	Loading	POWER OFF
E : 02	Loading motor rotates for more than 8 Sec without shift to next mode.	Unloading	POWER OFF
E : 03	TU REEL FG input is absent(for more than 4 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 04	DRUM FF input is absent(for more than 3 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP
E : 06	CAPSTAN FG input is absent(for more than 1 Sec)	REC/PLAY/FF/REW SEARCH FF/SEARCH REW	STOP → POWER OFF
E : 07	No SWD5V/12V	POWER ON	POWER OFF

Table 1-7-1 EMERGENCY FAULTS

1.7.3 How to clear emergency record

Press the CLEAR button on the remote controller in the emergency record display mode,and the record of the emergency fault(s) is cleared.

1.8 TECHNICAL INFORMATION

1.8.1 Syscon CPU pin function (IC701) 1/2

PIN NO.	LABEL	IN/OUT	NOTE
1	AFC S CURVE	IN	TUNING CHECK
2	START SENSOR	IN	LEADER TAPE DETECT (DETECT ON : L)
3	SYNC DET (L)	IN	SYNC DETECT (NO SYNC : H)
4	LOCK DET	IN	TUNING LOCK CHECK
5	END SENSOR	IN	TRAILER TAPE DETECT (DETECT ON : L)
6	NC	–	NC
7	NC	–	NC
8	NC	–	NC
9	VIDEO ENV.	IN	DC for VIDEO PB FM
10	PROTECT	IN	SWD 5 V/12 V DETECT
11	SECAM DET (H)	IN	SECAM SIGNAL DETECT
12	V. PULSE	OUT	V. PULSE ADDITION TIMING CONTROL
13	REC ST (H)	OUT	NORMAL AUDIO REC START : H
14	RC IN	IN	REMOTE CONTROL DATA INPUT
15	COL ROT	OUT	COLOR ROTATION SIGNAL
16	HEAD SEL	OUT	HEAD SELECT
17	ENV COMP	IN	PB ENVELOPE COMPARATER INPUT
18	D. FF	OUT	VIDEO PB FM (CH-1, CH-2) SWITCHING PULSE
19	A. FF	–	NC
20	COMB OFF (H)	OUT	COMB FILTER ON/OFF CONTROL
21	DOC OFF (L)	OUT	DOC ON/OFF CONTROL
22	REC (H)	OUT	REC MODE : H
23	A/M/S	OUT	PRE/REC IC CONTROL (AUTO : M/MANUAL : H/S & S ; L)
24	SECAM (H)	OUT	SECAM MODE : H
25	R. LOC/R. PAUSE	–	NC
26	LMC 1	OUT	LOADING MOTOR DRIVE (1)
27	LMC 2	OUT	LOADING MOTOR DRIVE (2)
28	LMC 3	OUT	LOADING MOTOR DRIVE (3)
29	CASS SW	IN	CASSETTE TAPE LOAD SWITCH (CASS IN : L)
30	REC SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON : L)
31	LS C	IN	MECHANISM MODE DETECT (C)
32	LS B	IN	MECHANISM MODE DETECT (B)
33	LS A	IN	MECHANISM MODE DETECT (A)
34	NUB	–	GND
35	NUA	–	GND
36	CLK SEL	–	Hi FIXED
37	Vcc	–	Vcc 5 V
38	X IN	–	SYSTEM CLOCK
39	X OUT	–	SYSTEM CLOCK
40	Vss	–	GND
41	XC IN	–	TIMER CLOCK
42	XC OUT	–	TIMER CLOCK
43	RESET	–	RESET
44	P CTL (H)	OUT	POWER ON/OFF CONTROL (POWER ON : H)
45	TU CLK	OUT	SERIAL DATA SHIFT CLOCK OUTPUT
46	TU CE	OUT	TUNER UNIT CHIP ENABLE
47	TU DATA	OUT	TUNER CONTROL SERIAL DATA OUTPUT
48	A. MUTE	OUT	AUDIO MUTE CONTROL
49	SP (L)	OUT	SP MODE ; L
50	NTSC (L)	OUT	NTSC MODE : L

Table 1-8-1 SYSCON CPU pin function (1/2)

1.8.2 Syscon CPU pin function (IC701) 2/2

PIN NO.	LABEL	IN/OUT	NOTE
51	CCIR (L)	OUT	CCIR DETECT : L
52	P. MUTE (L)	OUT	PICTURE MUTE CONTROL (MUTE ON : L)
53	EE (L)	OUT	EE MODE : L
54	NC	–	NC
55	NTSC SP (L)	OUT	NTSC SP MODE : L
56	IP ON (H)	OUT	INCREDIBLE PICTURE ON/OFF CTL (IP ON : H)
57	VAPT ON (H)	OUT	VIDEO APERTURE ON/OFF CTL (VAPT ON : H)
58	MESECAM DET (H)	OUT	MESECAM DETECT
59	RF SW 2	OUT	RF CONVERTER CH CTL (2)
60	RF SW 1	OUT	RF CONVERTER CH CTL (1)
61	I (L)	OUT	BROADCASTING SYSTEM (I SYSTEM : L)
62	D/K (L)	OUT	BROADCASTING SYSTEM (D/K SYSTEM : L)
63	B/G (L)	OUT	BROADCASTING SYSTEM (B/G SYSTEM : L)
64	OSD CS	OUT	ON SCREEN IC CHIP SELECT
65	SSB DATA	OUT	VIDEO AND AUDIO IC CONTROL DATA
66	FDP CS	OUT	CLOCK OUTPUT PERMISSION
67	SSB CLK	OUT	VIDEO AND IC DATA TRANSFER CLOCK
68	DATA O	OUT	ON SCREEN CONTROL DATA OUTPUT
69	DATA I	IN	ON SCREEN CONTROL DATA INPUT
70	S CLK	OUT	ON SCREEN DATA TRANSFER CLOCK
71	I2C CLK	OUT	EEPROM (IC702) DATA TRANSFER CLOCK
72	I2C DATA	OUT	EEPROM (IC702) DATA OUTPUT
73	PB SPE (L)	OUT	SPECIAL PB MODE : L
74	3.58 NTSC (H)	OUT	3.58 MHz NTSC MODE : H
75	BEST (L)	–	NC
76	CAP REV (L)	OUT	CAPSTAN MOTOR CONTROL (FWD : H/REV : L)
77	CAP CTL V	OUT	CAPSTAN MOTOR VOLTAGE CONTROL
78	DRUM CTL V	OUT	DRUM MOTOR VOLTAGE CONTROL
79	SP FG	IN	SUPPLY REEL ROTATION DET/TAPE REMAIN
80	TU FG	IN	TAKE UP REEL ROTATION DET/TAPE REMAIN
81	BEST CTL	–	NC
82	POWER DET	IN	POWER SOURCE DETECT
83	C	–	NC
84	C. SYNC	IN	COMPOSITE SYNC
85	C. FG IN	IN	CAPSTAN FG INPUT (TAPE SPEED/BACK SPACE COUNT)
86	D. PG IN	IN	DRUM PICKUP PULSE INPUT (SWITCHING PULSE)
87	D. FG IN	IN	DRUM FG PULSE INPUT
88	AMP Vss	–	GND
89	AMP VREF OUT	OUT	CTL PULSE AMP REFERENCE VOLTAGE
90	AMP VREF IN	IN	CTL PULSE AMP REFERENCE VOLTAGE
91	CTL (–)	IN/OUT	CTL (–) SIGNAL
92	CTL (+)	IN/OUT	CTL (+) SIGNAL
93	CTL SW OUT	OUT	CTL (+) SIGNAL OUTPUT
94	CTL AMP IN	–	CTL PULSE INPUT
95	AMP C	–	CAPACITOR CONNECT TERMINAL for CTL AMP CIRCUIT
96	CTL Vss	–	Vss
97	CTL AMP OUT	OUT	CTL PULSE OUTPUT
98	AMP Vcc	–	Vcc
99	AVcc	–	Vcc
100	NC	–	NC

Table 1-8-2 SYSCON CPU pin function (2/2)

SECTION 2
MECHANISM ADJUSTMENT

2.1 PREPARATION

2.1.1 Precautions

(1) Disconnect VCR from AC power before soldering.
(2) Avoid imparting stress to wires when disengaging connectors.
(3) Determine and correct the cause of difficulty before proceeding to adjustments.Do not disturb settings unnecessarily.
(4) Use care not to damage tabs,claws,etc during repairs.
(5) Install the cassette housing assembly only when the mechanism is in the MECHANISM ASSEMBLING MODE position.
(6) When installing the Front panel assembly,be sure to engage the housing door with the door opener of the cassette housing assembly.
If this is omitted,the cassette door will not open at Eject and the cassette can not be removed. (See SECTION 1 DISASSEMBLY)

2.1.2 Check without cassette housing assembly.

Mechanism operations can be observed easily by removing the cassette housing assembly. Use the MECHANISM SERVICE MODE (See SECTION 1 DISASSEMBLY).

2.1.3 Manual removal of loaded tape

When the deck enters the emergency mode with cassette tape loaded and it can not be ejected by pressing the EJECT button,take out of the cassette tape according to the following procedure.

(1) Disconnect the power cord from AC outlet then take out the Top cover and Front panel assembly.
(2) Turn the loading motor on the Main deck assembly by hand in the unloading direction to where the pole base assembly (supply and take-up) is positioned below the cassette tape.At that time, pay careful attention to the tape not to get soiled with grease.
(3) Take out 4 screws of the cassette housing assembly.(See SECTION 1 DISASSEMBLY)
(4) Remove the cassette housing with slackened tape and guard panel of cassette.
(5) Wind up the tape by turning the reel hub(either supply or take-up side for convenience) from the bottom of the cassette,and remove the cassette tape.

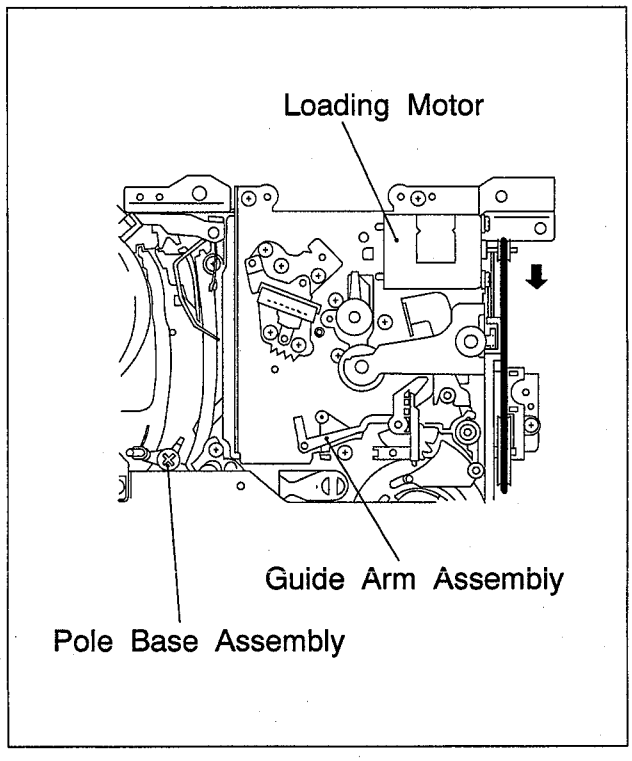


Fig. 2-1-1

2.1.4 Test Equipment

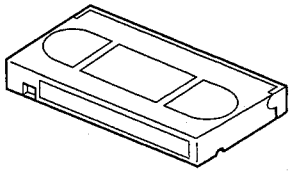
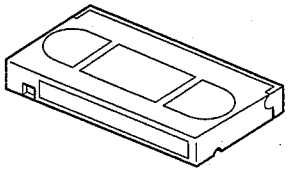
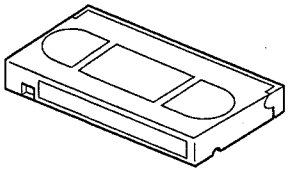
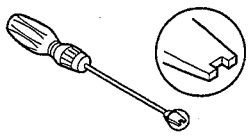
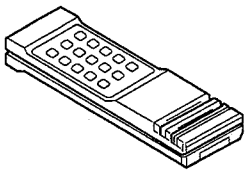
Alignment tape (SP) 4822 397 30262	Alignment tape (LP) 4822 397 30261	Back tension cassette gauge 4822 395 90615	A/C head positioning tool 4822 395 90916
			
Roller driver 4822 395 90904	Presetting unit 4822 395 90915		
			

Table 2-1-1 Test equipment

2.2 MAIN MECHANISM PARTS

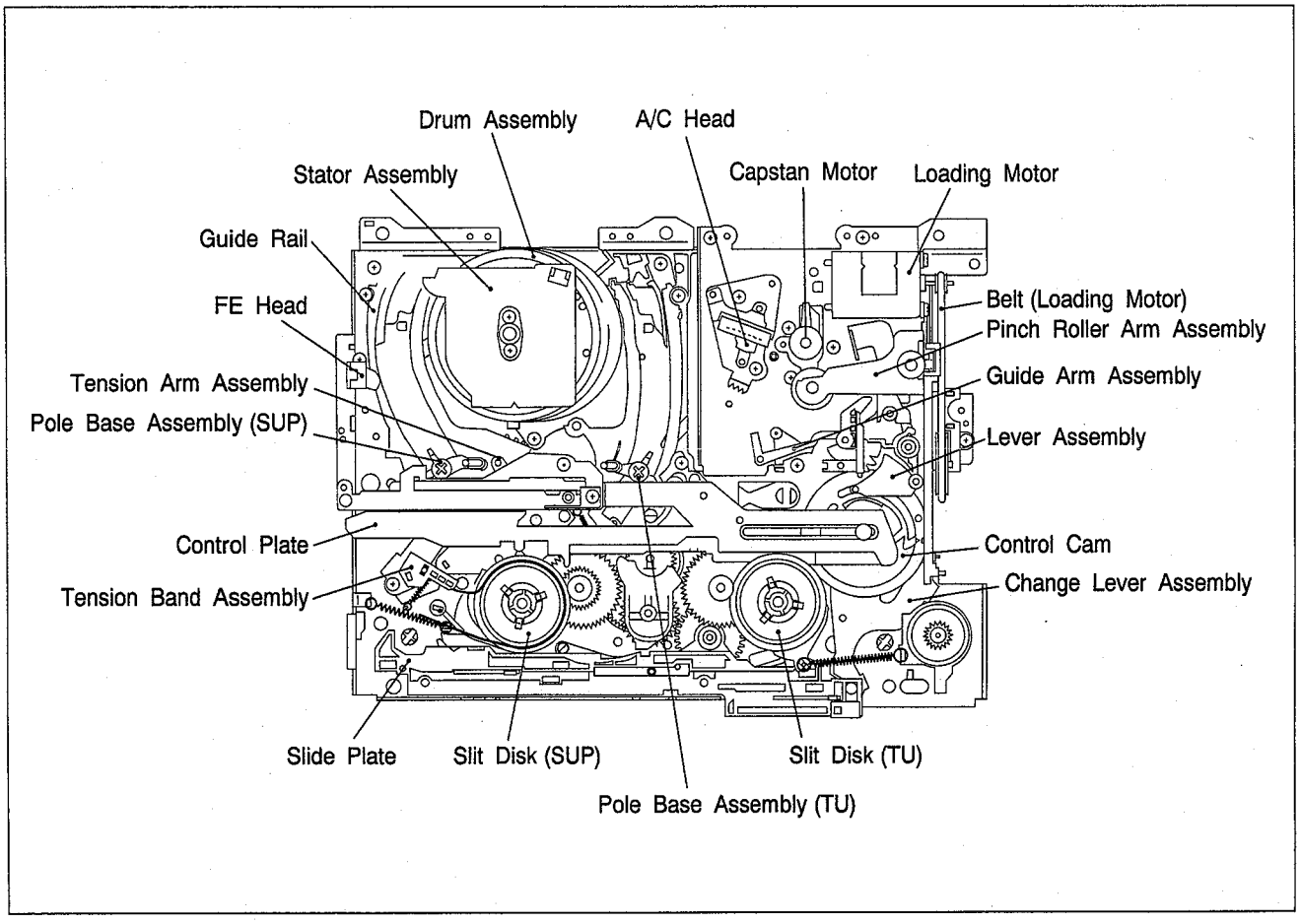


Fig. 2-2-1 Top view of main deck

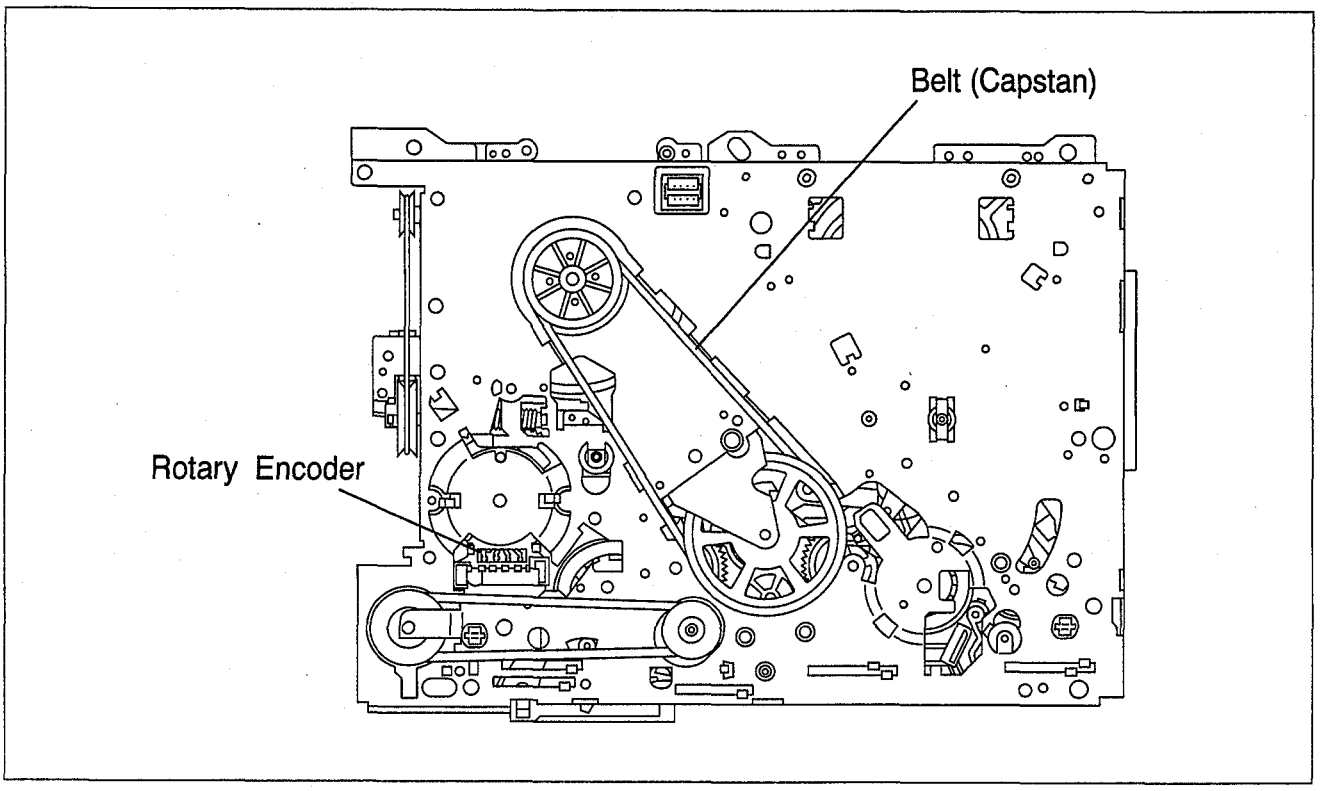


Fig. 2-2-2 Bottom view of main deck

2.2.1 Cleaning

Periodic cleaning of the tape transport system is desirable,but usually not feasible in practice.Therefore,perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads,tape guides and brush can detract from playback picture quality and in extreme cases,even damage the tape.For cleaning,use a finemesh cotton cloth(about the texture of a white dress-shirt) moistened in alcohol. It is recommended to also clean the tape tension posts and capstan.

- To clean the video heads,press the moistened cloth gently against the upper drum with fingertip and turn the drum by hand.
- Do not use a vertical stroke,as this may damage the heads.

2.2.2 Lubrication

Oil and grease do not normally require periodic replenishing. Apply only when replacing lubricated parts(also clean and replace lubrication of mating parts if soiled). For parts and points to apply oil and grease, refer to the exploded views of the mechanism assembly. Before oiling,clean with alcohol.Apply one or two drops of oil. Avoid excess oil.

1. Grease is not required for a replacement cassette housing assembly,as this has been applied at the factory.

NOTE : *Stir grease that has been stored for an extended period.*

2.3 INSPECTION AND MAINTENANCE

This product employs rotary and moving parts which wear out in the course of usage.Periodic inspection, cleaning, lubrication and maintenance are therefore important for ensuring maximum performance. Worn parts must also be replaced as and when required.

2.3.1 Suggested servicing schedule for main components

The following table indicates the suggested period for such service measures as cleaning,lubrication and replacement. In practice, the indicated periods will vary widely according to environmental and usage conditions.However, the indicated components should be inspected when a set is brought for service and the maintenance work performed if necessary. Also note that rubber parts may deform in time,even if the set is not used.

System	Parts Name	Operation Hours	
		~1000H	~2000H
Tape transport	Upper drum assembly	★○	○
	A/C head	★○	★○
	Lower drum motor assembly	★	★○
	Pinch roller arm assembly	★	★
	Full erase head	★	★
	Tension arm assembly	★	★
	Guide arm assembly	★	★
Drive	Capstan motor		○
	Belt (Capstan)	○	○
	Belt (Loading motor)		○
	Loading motor		○
	Slit disk (supply, take-up)		○
	Clutch unit (supply, take-up)		○
	Worm gear assembly		○
	Control plate		○
	Slide plate		○
Other	Brush assembly	★○	★○
	Tension band assembly	○	○
	Rotary encoder		○

★ : Cleaning
○ : Inspection or Replacement if necessary

Table 2-3-1

2.4 DISASSEMBLY/ASSEMBLY PROCEDURE OF MECHANISM

2.4.1 Precaution before disassembling mechanism

This mechanism has an exclusive operation mode provided for disassembling and installation of the mechanism (MECHANISM ASSEMBLING MODE), and it is suggested to set the mechanism to this mode before disassembly and installation.The exclusive mechanism operation mode is not generally used and becomes available by manual setting only. Then this procedure starts with the condition that the cabinet parts and cassette housing assembly have been removed.

2.4.2 How to set the exclusive mechanism operation mode (MECHANISM ASSEMBLING MODE)

(1) Turn the loading motor belt by hand.
(2) Confirm that the hole of the control cam are aligned to the deck hole as shown in Fig.2-4-1.

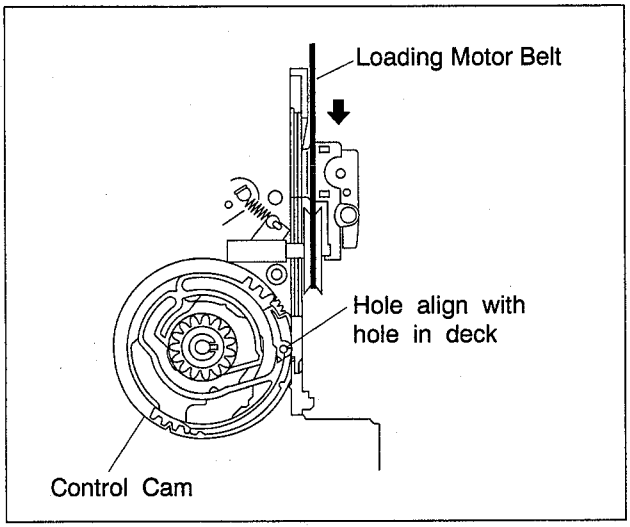


Fig. 2-4-1

2.5 MAIN PARTS REPLACEMENT OF MECHANISM

2.5.1 Pinch Roller Arm Assembly

(1) Remove the slit washer.
(2) Tilt up the pinch roller assembly in direction of arrow.

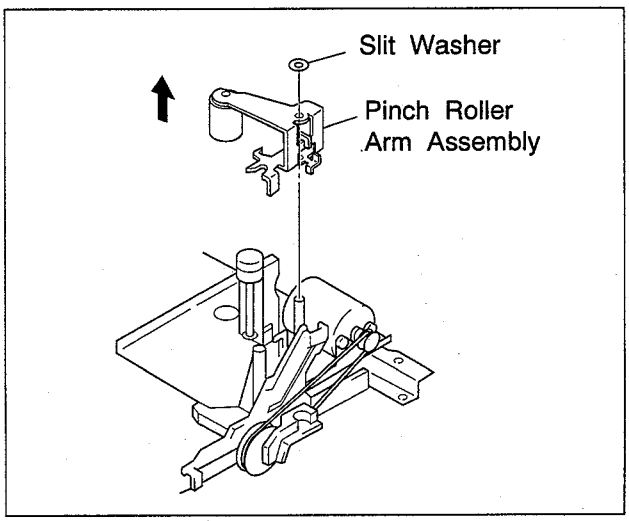


Fig.2-5-1

2.5.2 A/C Head

1. Removal

(1) Take out 2 screws (A).

(2) Remove the A/C head with head base.

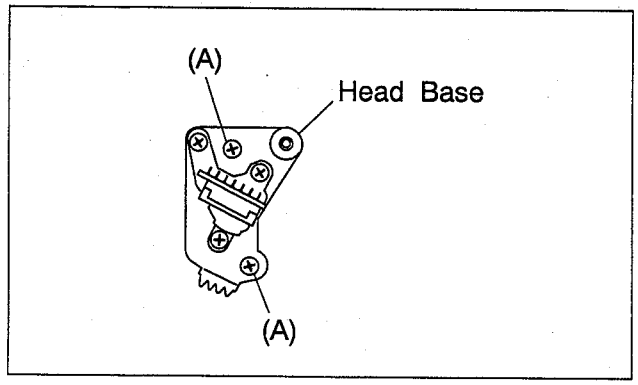


Fig.2-5-2

(3) When replacing the A/C head only,remove 3 screws (B), use care not to misplace the 3 springs.

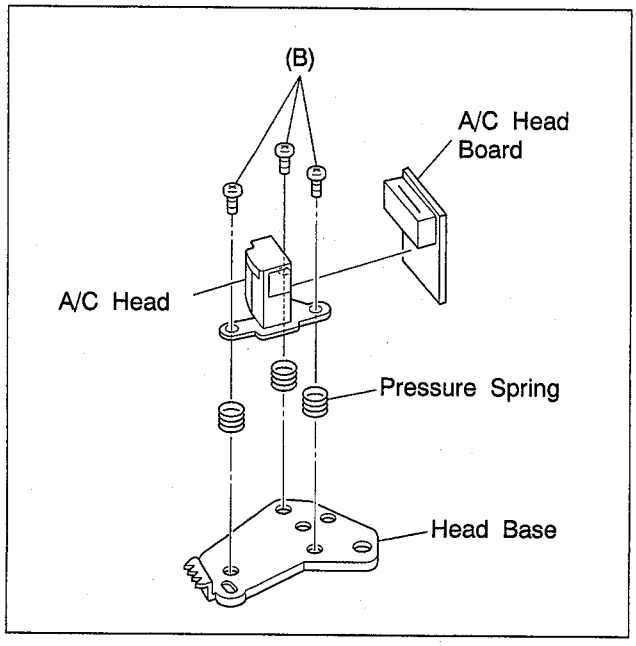


Fig.2-5-3

2. Installation

(1) Temporarily set A/C head height as indicated in Fig. 2-5-4.

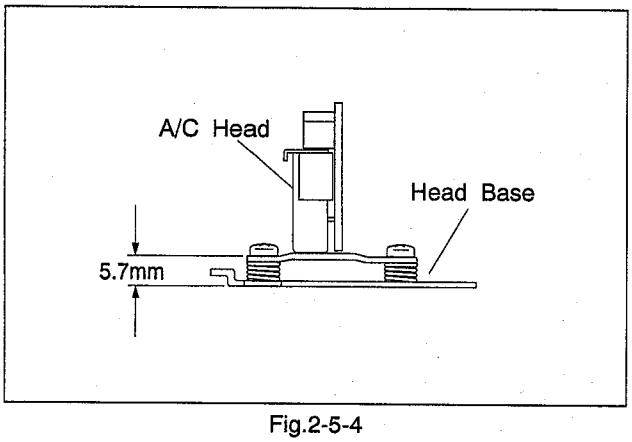


Fig.2-5-4

NOTES:

- *It is very important to correctly adjust the control pulse and audio signal in addition to the mechanical tape path.*
- *Perform interchangeability adjustments after electrical adjustments.*

2.5.3 Pinch Plate

1. Removal

(1) Disengage 2 claws, then remove the pinch plate.

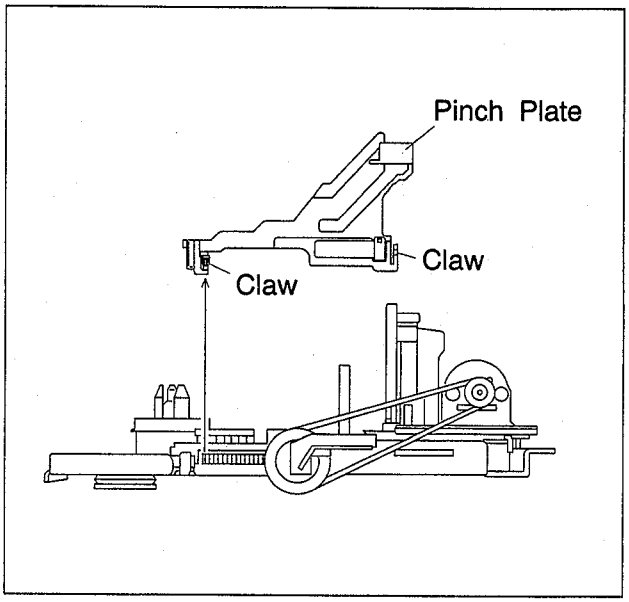


Fig.2-5-5

2. Installation

(1) When installing pinch plate,align rack of pinch plate and triangle mark of control cam as indicated in Fig.2-5-6.

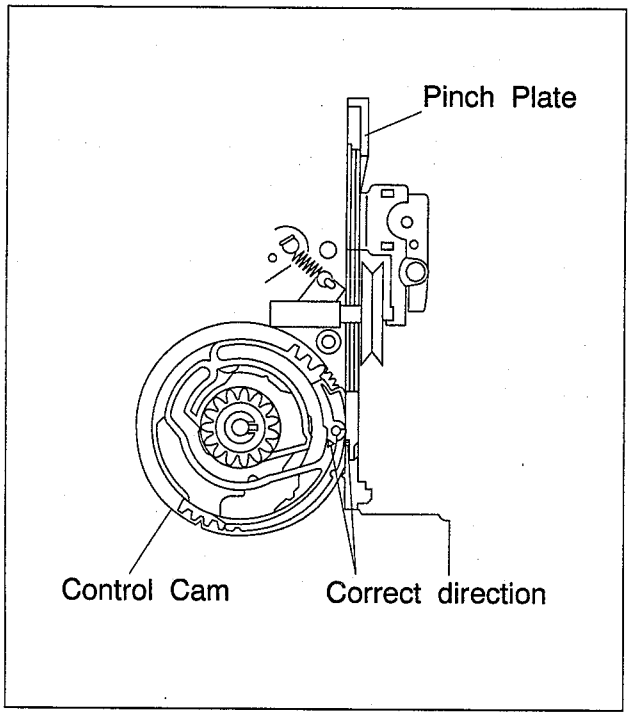


Fig. 2-5-6

2.5.4 Loading Motor

(1) Disengage the belt between loading motor and worm gear.
(2) Take out 2 screws (A) then remove the loading motor.

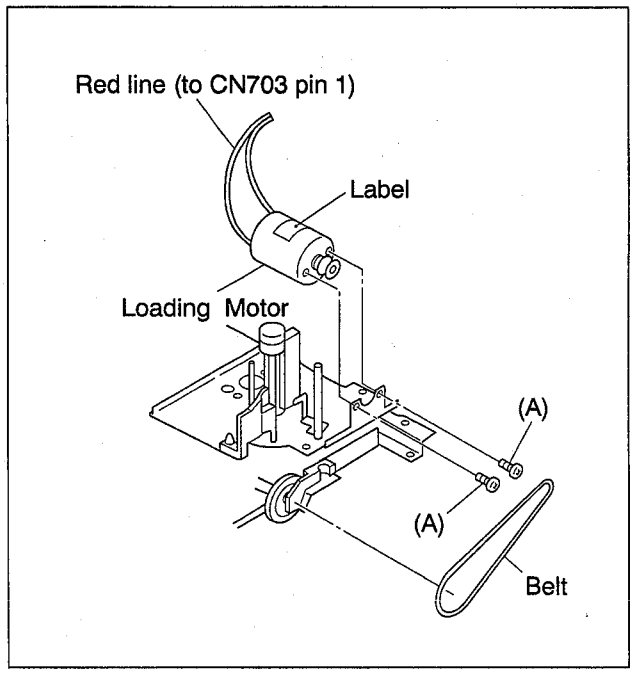


Fig.2-5-7

2.5.5 Lever Assmebly,Sub Deck Assembly,Capstan Motor

(1) Take out 1 slit washer,then remove the lever assembly.
(2) Disengage the belt(capstan motor) from bottom of mechanism assembly first as indicated in Fig.2-5-10.
(3) Take out 3 screws (A) and remove the sub deck assembly as indicated in Fig.2-5-8.
(4) Take out 3 screws (B) and remove the capstan motor from the sub deck assembly as indicated in Fig.2-5-9.

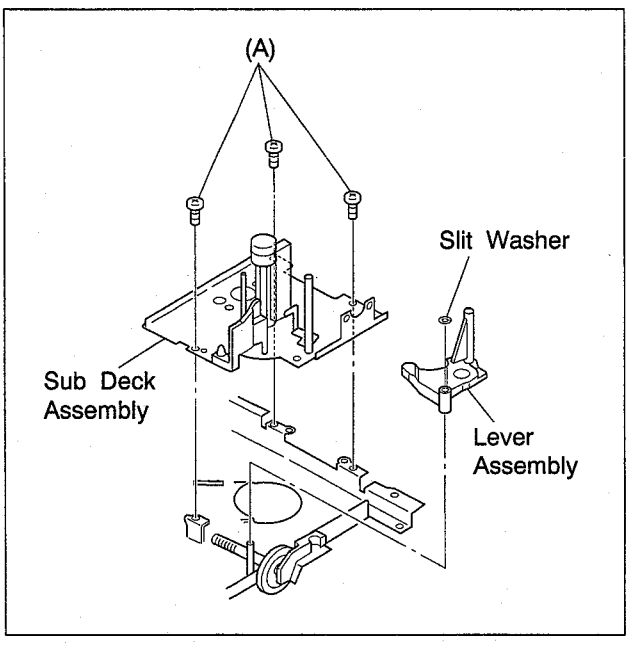


Fig.2-5-8

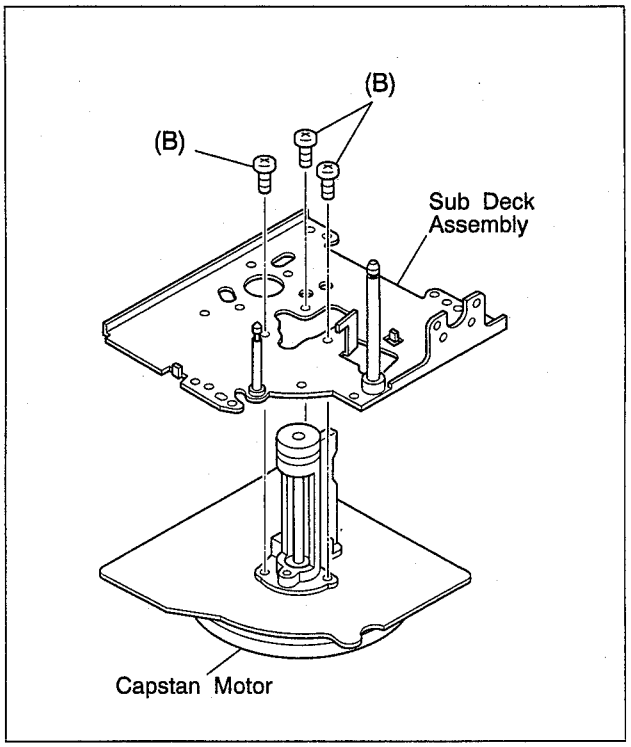


Fig.2-5-9

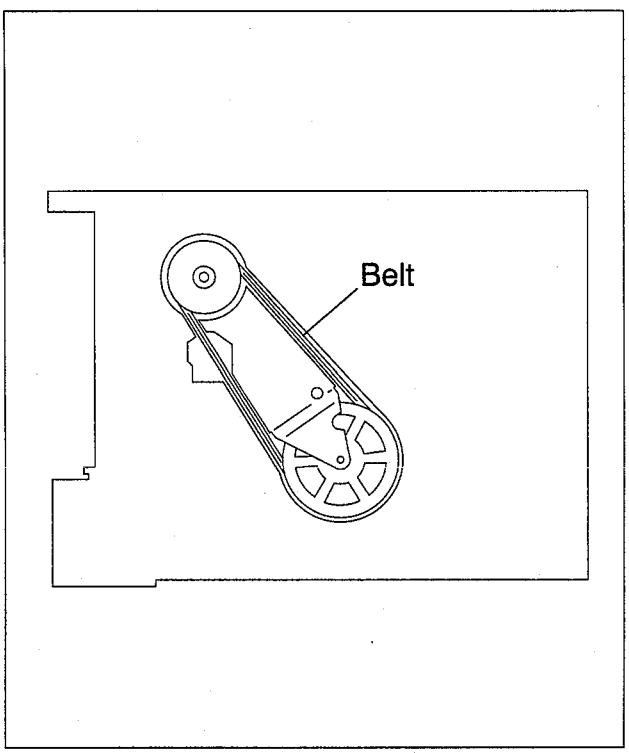


Fig.2-5-10

2.5.6 Control Bracket

(1) Take out 1 screw (A) and 1 screw (B).
(2) Remove the control bracket.

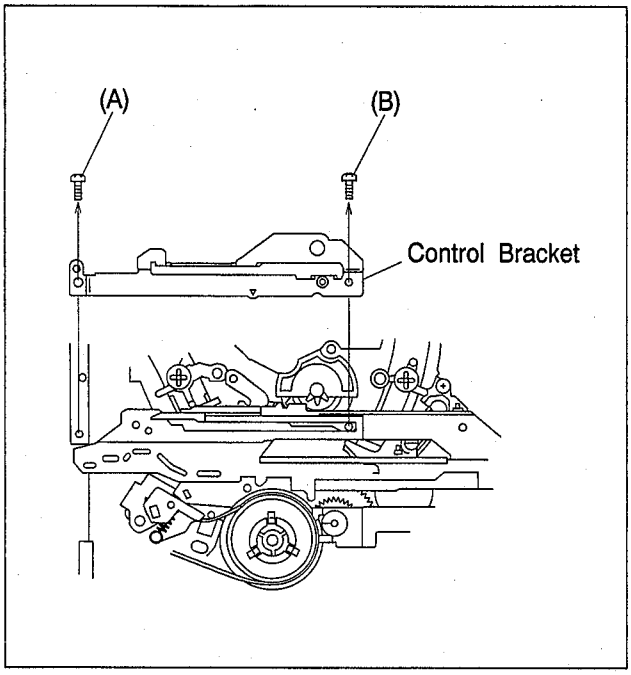


Fig.2-5-11

2.5.7 Slit disk (take-up)

(1) Take out 1 slit washers.
(2) Remove the slite disk (take-up).

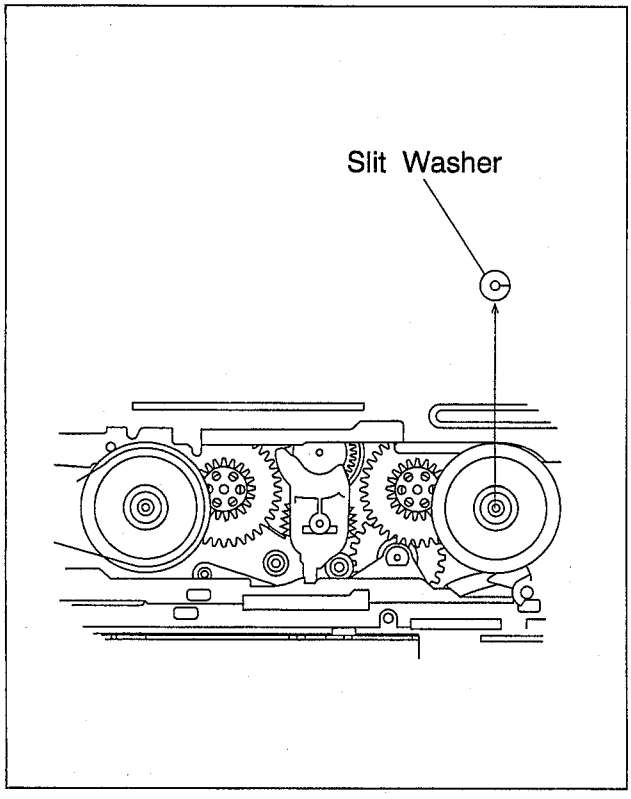


Fig.2-5-12

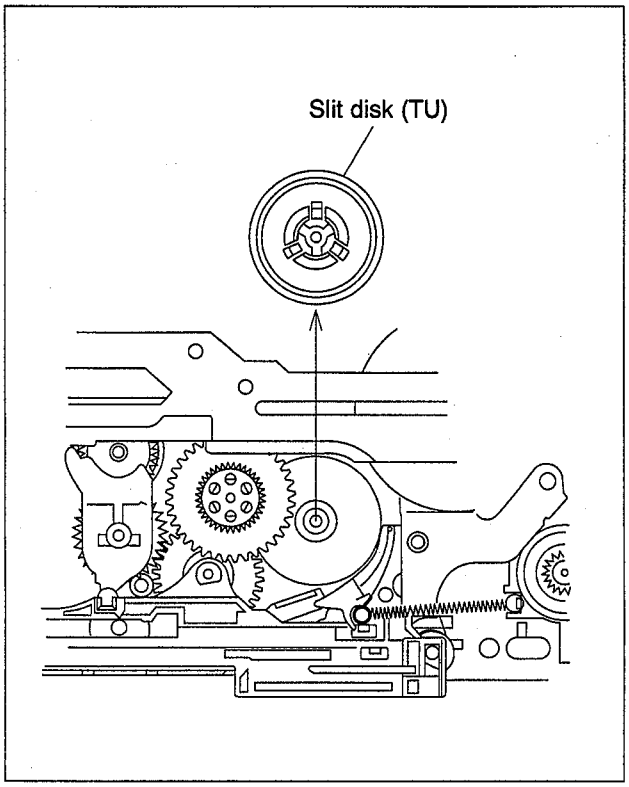


Fig.2-5-13

2.5.8 Control Plate

(1) Take out 1 slit washer.
(2) Disengage 2 claws and remove the control plate.

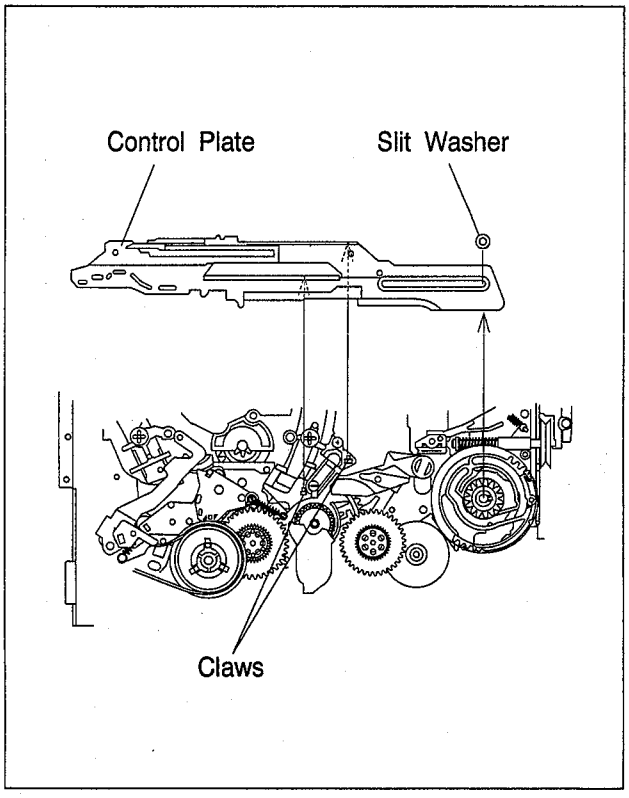


Fig.2-5-14

2.5.9 Sub Brake(take-up),Control Cam

(1) Disengage 1 spring (a) and 1 claw then remove the sub brake (take-up).
(2) Disengage 1 claw and remove the control cam.

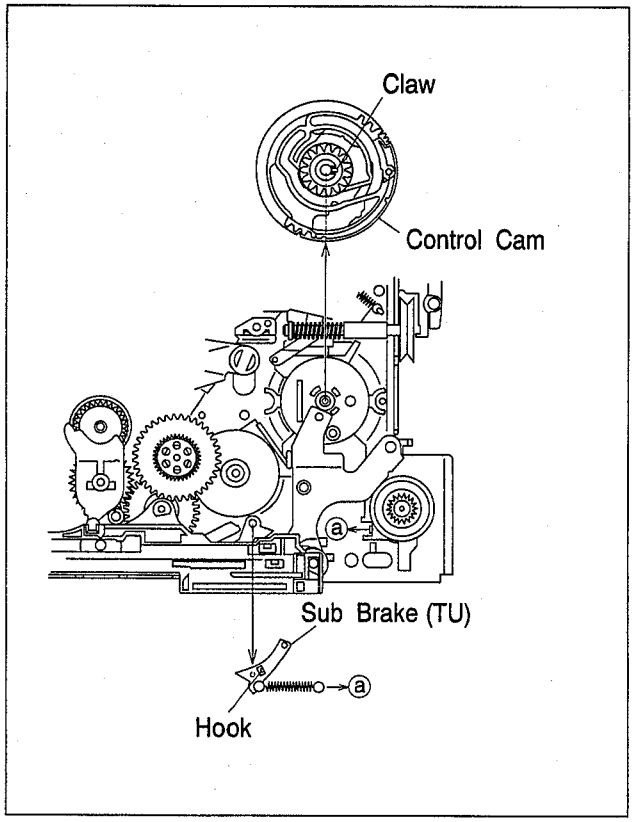


Fig.2-5-15

2.5.10 Slide Plate

(1) Disengage 7 claws from bottom of the mechanism assembly and remove the slide plate.

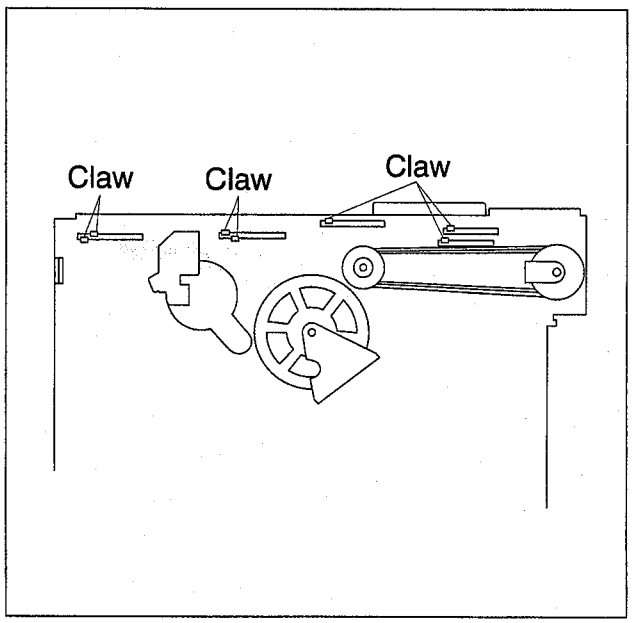


Fig. 2-5-16

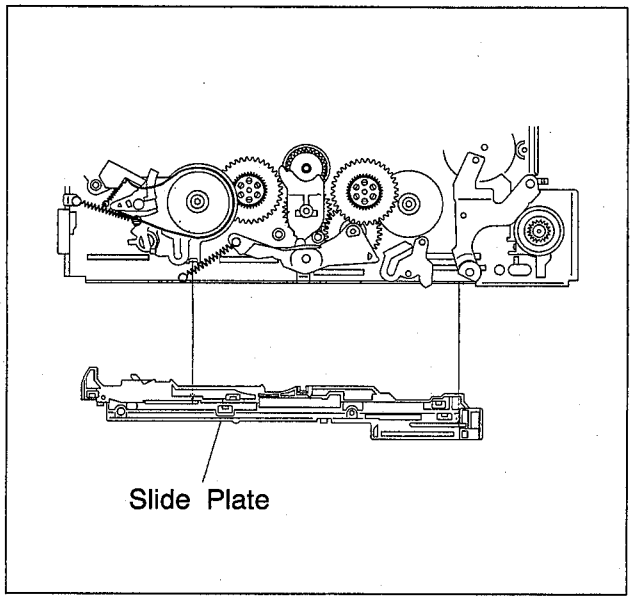


Fig. 2-5-17

2.5.11 Change Lever,Rotary Encoder

(1) Remove the change lever.
(2) Disengage 2 claws and remove the rotary encoder.

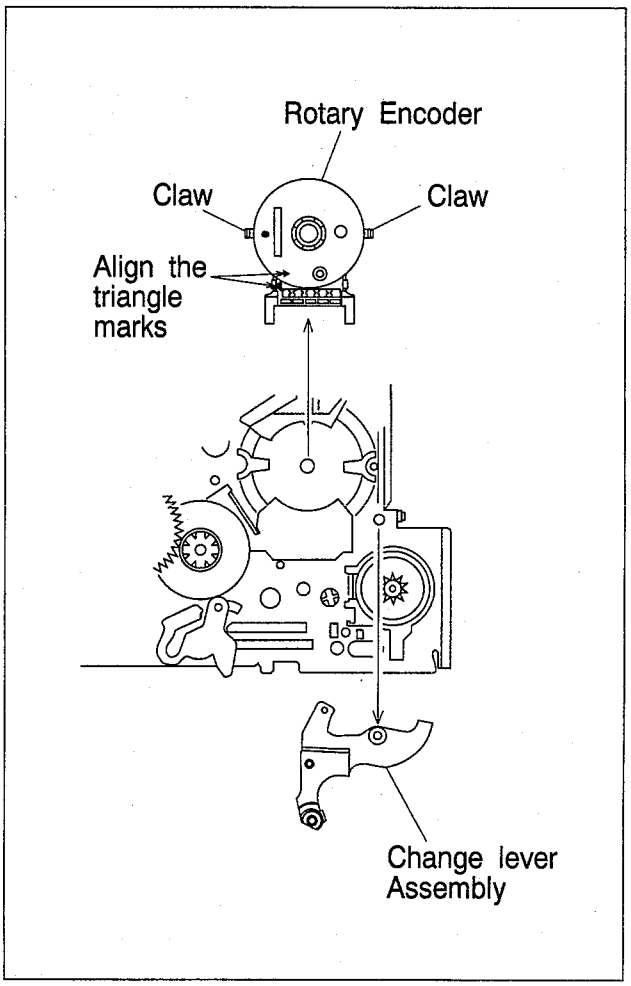


Fig. 2-5-18

2.5.12 Sub Brake (supply),Tension Band Assembly, Tension Arm Assembly, Take-up Lever Assembly,Slit Disk(supply)

(1) Disengage 1 spring ⓐ.
(2) Disengage 1 claw and remove the sub brake (supply).
(3) Take out 1 spring Ⓒ and slit washer then disengage 1 claw.
(4) Remove the tension arm assembly with tension band assembly.
(5) Remove the take-up lever assembly.
(6) Take out 1 slit washer then remove the slit disk(supply).

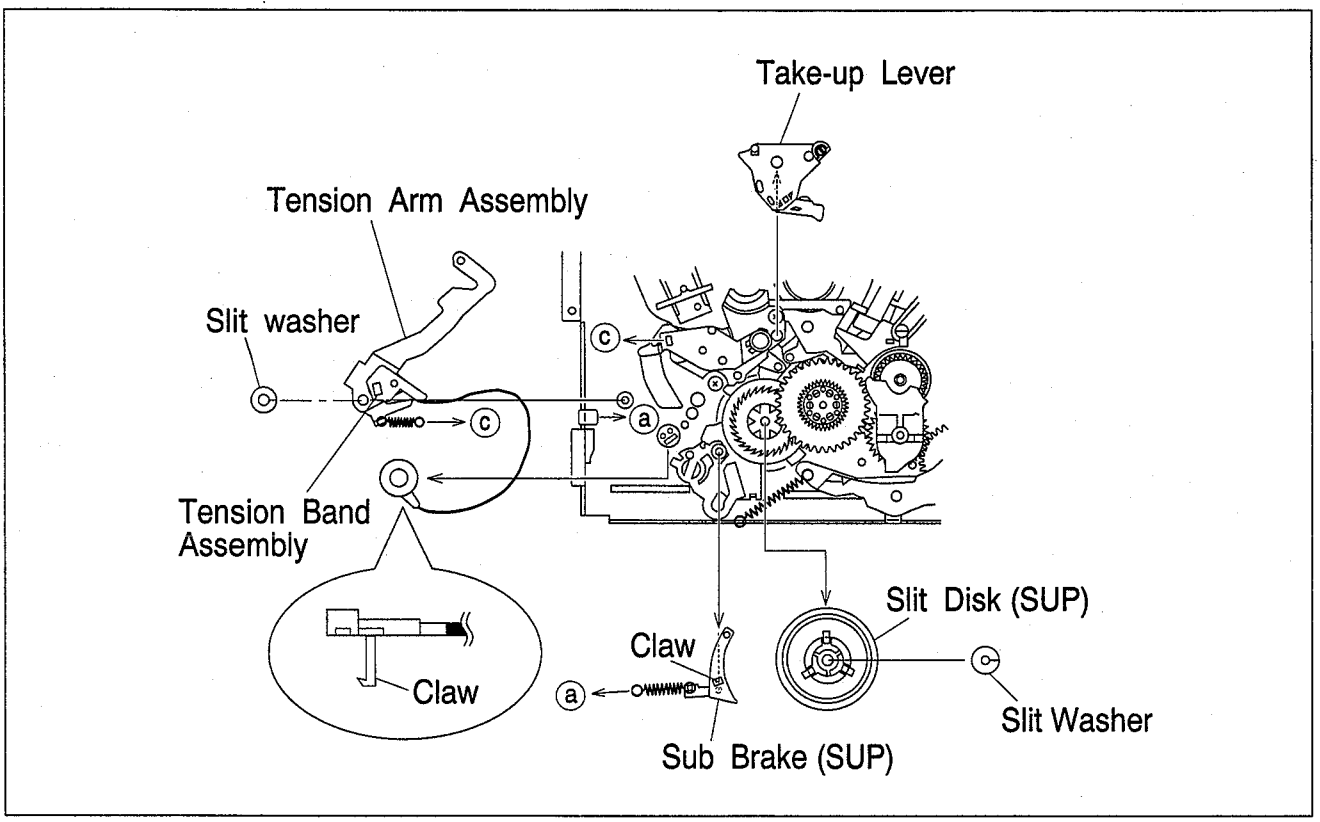


Fig. 2-5-19

2.5.13 Take-up Head,Tension Arm Lever

(1) Remove the take-up head and tension arm lever.

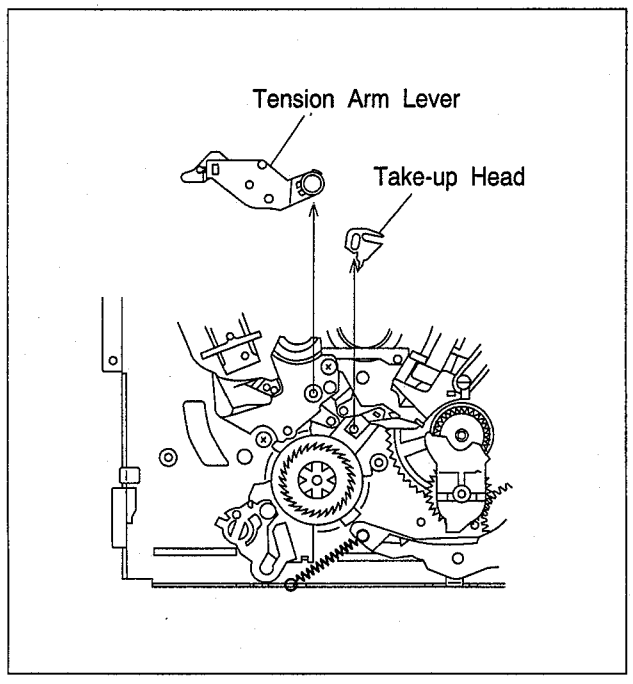


Fig.2-5-20

2.5.14 Guide Rail

(1) Take out 5 screws (A) and 1 screw (B).
(2) Disengage 4 claws and remove the guide rail.

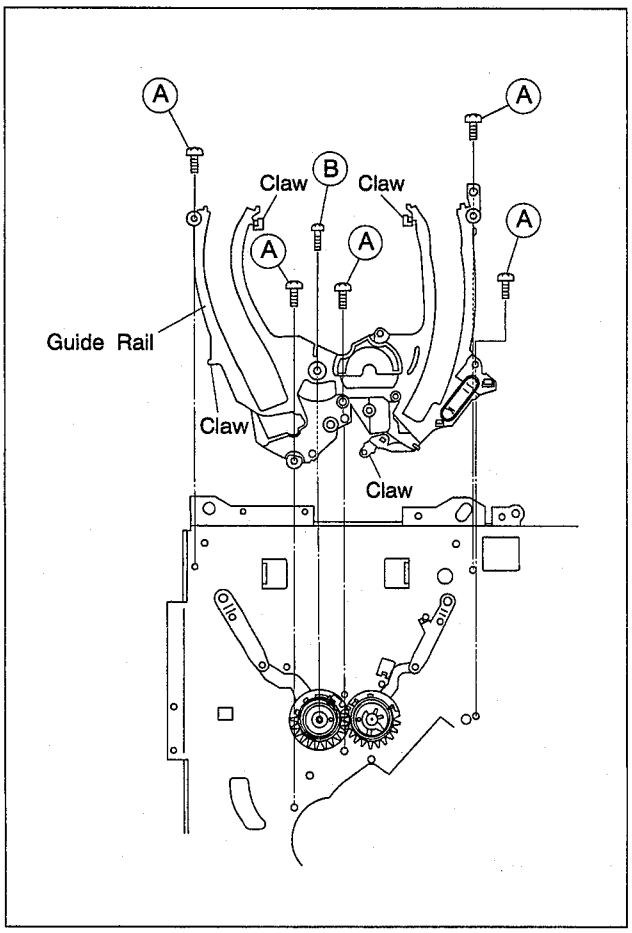


Fig. 2-5-21

2.5.15 Stator Assembly

(1) Take out 2 screws (A).
(2) Raise the stator assembly in the direction indicated by the arrow to remove it.
(3) Remove the flat cable.
(4) To reinstall,first secure the flat cable,then insert 2 screws (A).
(5) After reinstalling, be sure to perform PB switching point adjustment(See SECTION 3 ELECTRICAL ADJUSTMENT).

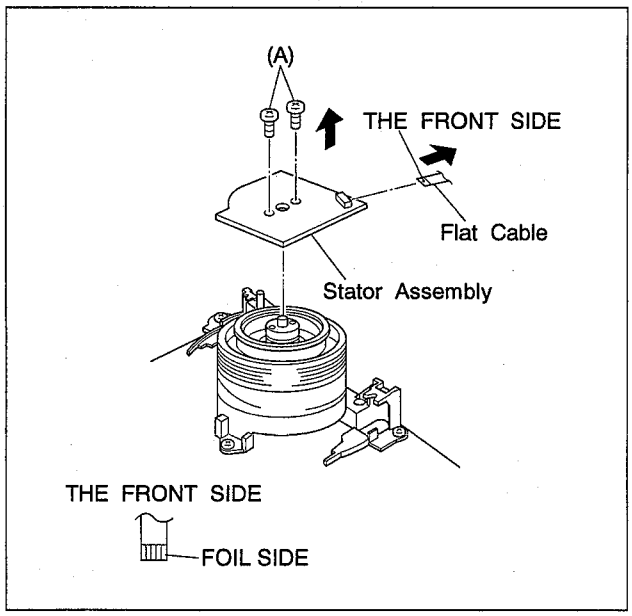


Fig. 2-5-22

NOTE : *When refitting the connector, check that the flat wire is inserted correctly.*

2.5.16 Rotor Assembly

(1) Remove the stator Assembly.
(2) Take out 2 screws (B) and remove the rotor Assembly.

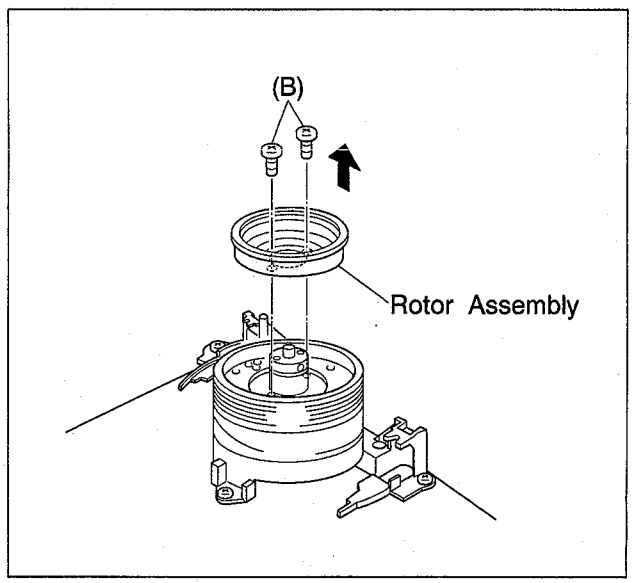


Fig.2-5-23

(3) Align the upper drum assembly and rotor assembly phase as indicated in Fig.2-5-24.
(4) Overlap holes (a) of the upper drum assembly with holes (b) of the rotor assembly and secure with 2 screws (B) as indicated in Fig.2-5-23.

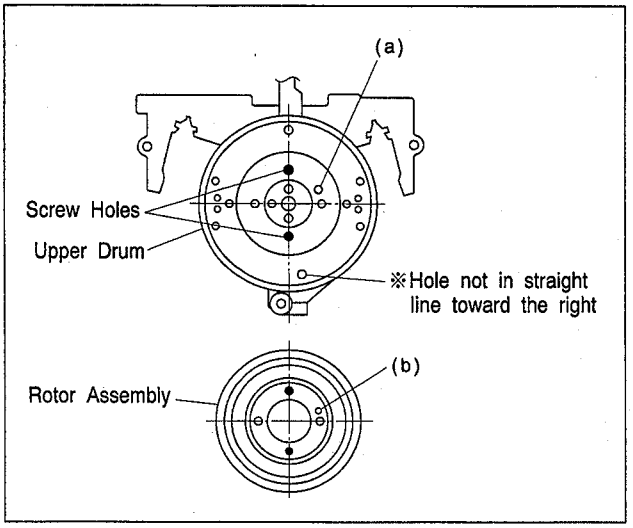


Fig. 2-5-24

2.5.17 Upper Drum Assembly

1. Removal

(1) Remove the stator assembly and rotor assembly.
(2) Use a 1.5 mm hexagonal wrench to loosen the collar assembly screw and remove the collar assembly with brush, and remove the cap.
(3) Remove the upper drum assembly and use tweezers to remove the washer.

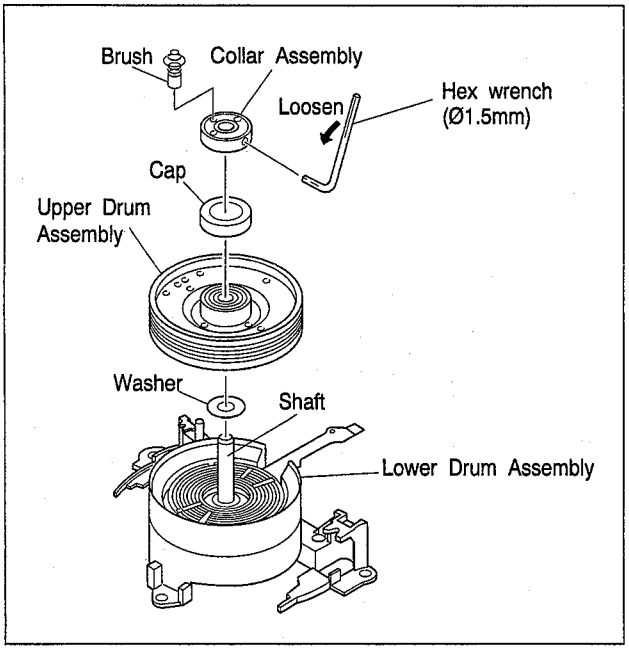


Fig. 2-5-25

NOTE : *If the Brush is replaced, do not apply the grease to the contacts.*

2. Installation

(1) Use an air brush to clean the lower drum assembly and the coil section of the new upper drum assembly.
(2) Set a new washer on the drum shaft as indicated in Fig.2-5-25.

NOTE : *Be sure to use the new washer when replace the upper drum assembly.*

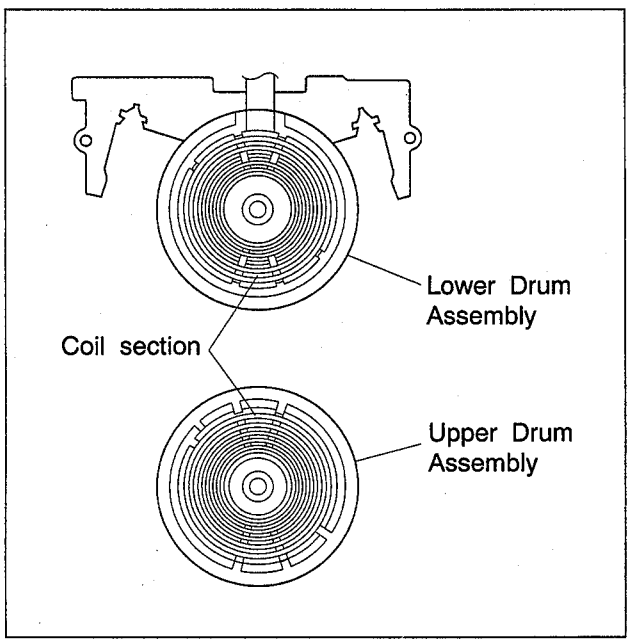


Fig.2-5-26

(3) Note the top and bottom of the collar assembly and determine the position as indicated in Fig.2-5-27.

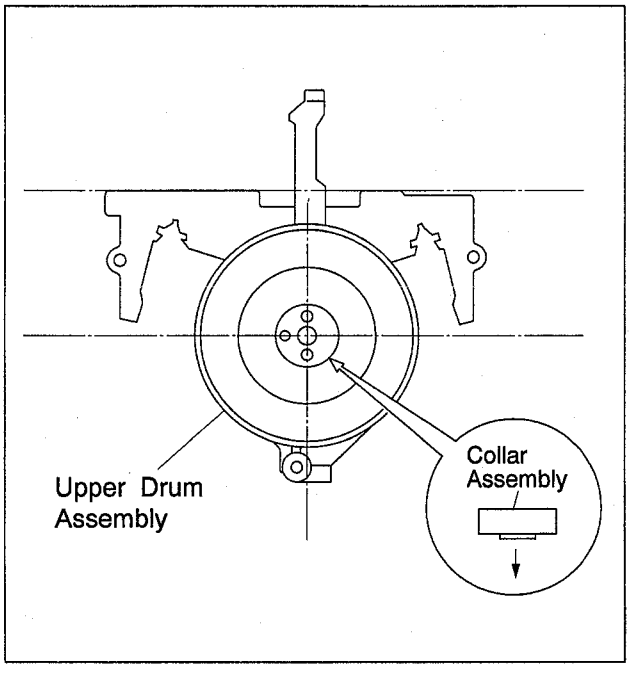


Fig.2-5-27

(4) While pressing the collar assembly evenly from above with your fingertips,secure the hexagonal screw.

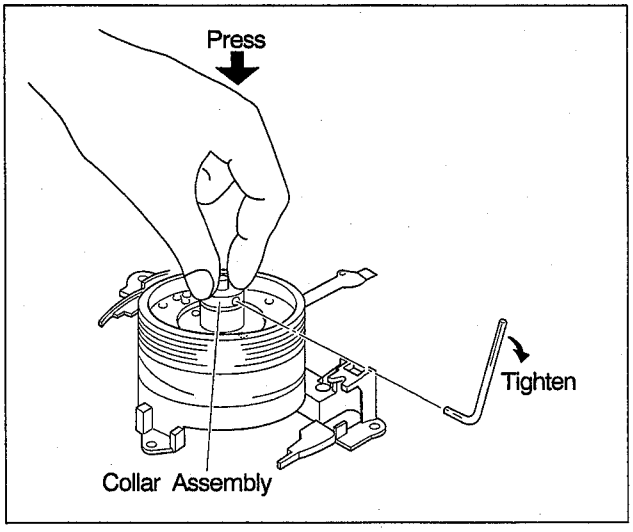


Fig.2-5-28

(5) After installing,gently turn the upper drum by hand and confirm normal rotation.
(6) Install the rotor assembly and stator assembly.
(7) Clean the upper and lower drum assembly and perform the following adjustments;
- PB switching point adjustment
- Slow tracking preset adjustment
- Interchangeability adjustment (be sure to check LP mode)

2.6 CHECKUP AND ADJUSTMENT OF MECHANISM PHASE

2.6.1 Precaution

The rotary encoder and syscon circuit are closely interrelated.Therefore,the rotary encoder and control cam connection determines the operations of mechanical parts such as plates,gears,brakes,etc.Correct positioning of these parts is essential for smooth tape loading and mechanical operations.

2.6.2 Loading Arm Assembly (supply,take-up)

(1) Install the supply loading arm assembly and the take-up loading arm assembly so that their positioning markings on the respective gear face each other and the holes of their arms correspond to the holes on the main deck assembly respectively.
(2) After setting the guide rails,engage the pole base assemblies with the tip of the loading arms respectively. Then,enter the mechanism into the unloading mode to return the pole base assemblies to the front position.
(3) Reassemble the peripheral parts of the guide rail to its original position.

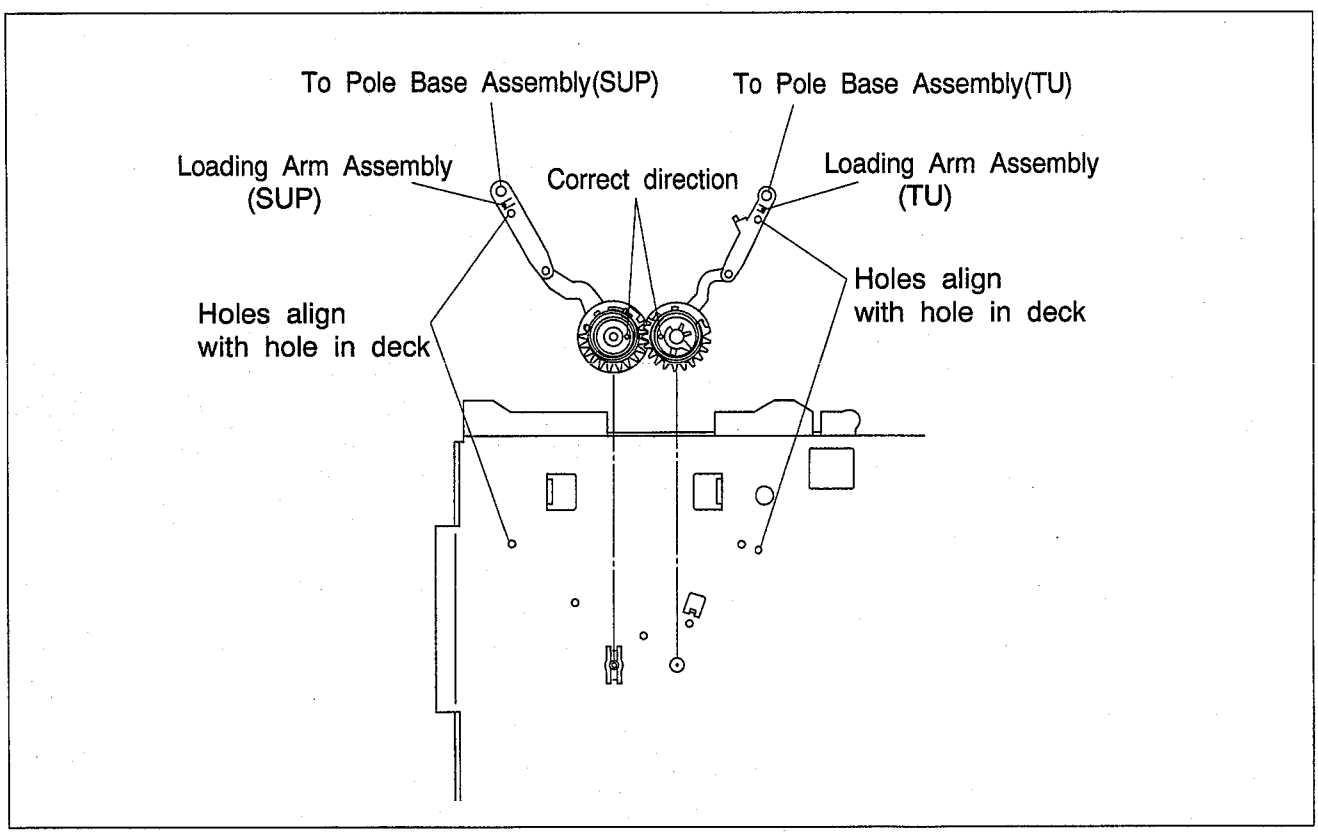

To Pole Base Assembly(SUP)
To Pole Base Assembly(TU)
Loading Arm Assembly (SUP)
Correct direction
Loading Arm Assembly (TU)
Holes align with hole in deck
Holes align with hole in deck

Fig. 2-6-1

2.6.3 Rotary Encoder,Change Lever,Control Cam

(1) When reinstalling the rotary encoder,adjust its position so as to fit the triangle marks each other and push it deep untill it is locked by the pawls.
(2) When reinstalling the change lever,set it so as to make its positioning hole correspond to the hole of the main deck assembly.
(3) When re-engaging the control cam,lower the capstan brake assembly while setting it so as to make its positioning hole correspond to the hole of the main deck assembly.

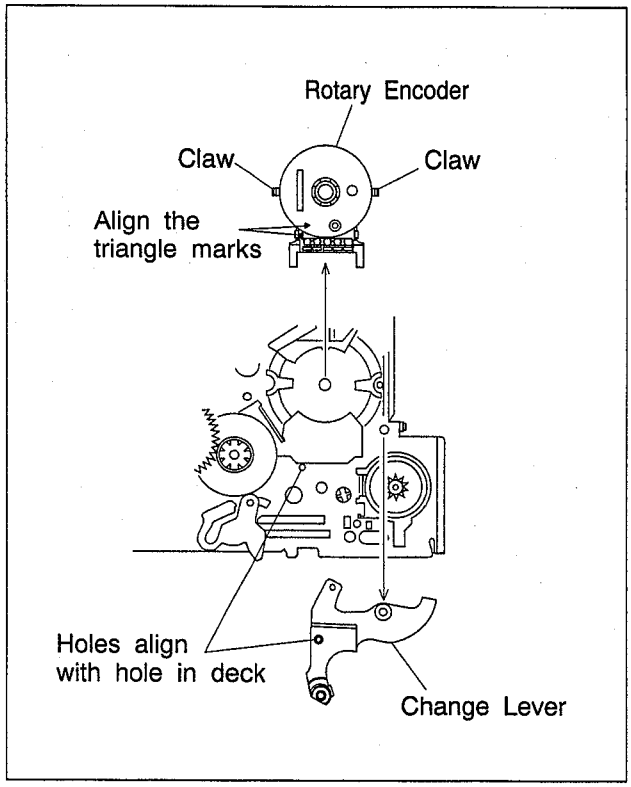


Fig. 2-6-2

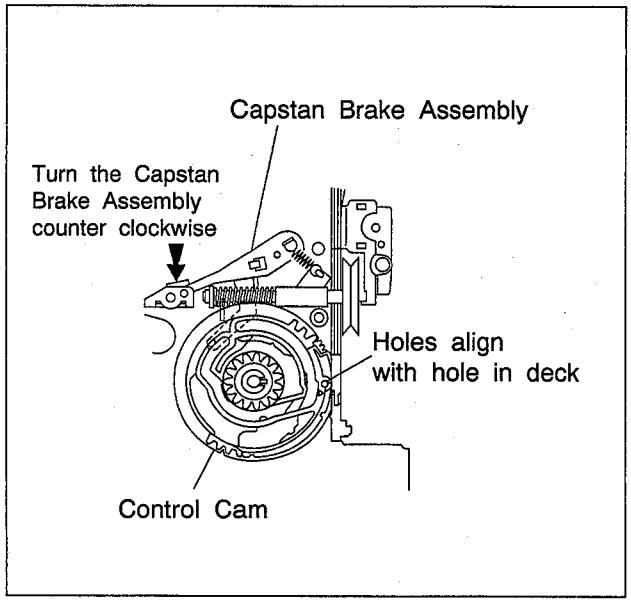


Fig. 2-6-3

2.6.4 Slide Plate

(1) Lower both the main brake assembly (supply and take-up) untill they touch the edge of the main deck assembly while reinstalling the slide plate so as to make the respective positioning holes of the main brake assembly correspond to the holes on the main deck assembly.

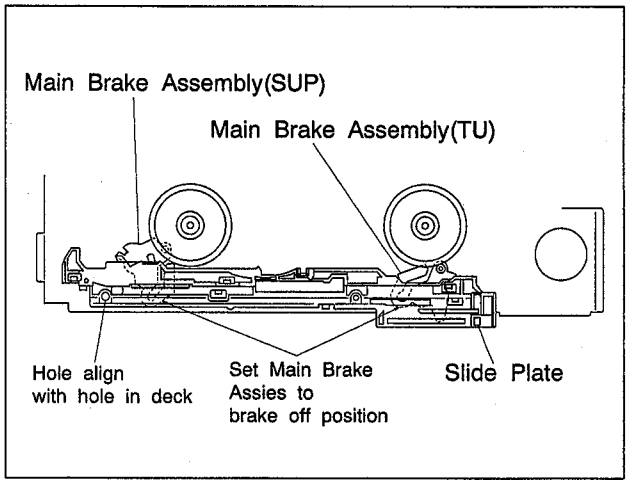


Fig.2-6-4

2.6.5 Control Plate

(1) Reinstall the control plate so as to set the two positioning holes of it on the holes on the main deck assembly respectively and to set the positioning hole of the take-up lever on the hole of the main deck at the same time. When adjusting the hole position of the take-up lever,use a pair of tweezers to hold and move it since it is pulled by a tension spring.
(2) After reinstalling the control plate,fix it with the slit washer,control bracket and control bracket-2.

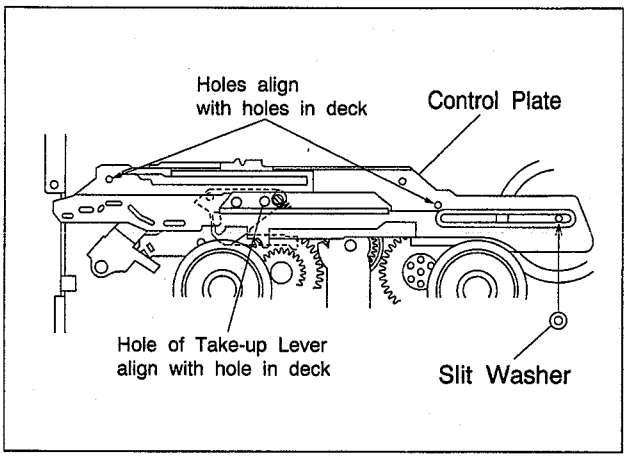


Fig. 2-6-5

2.7 TAPE INTERCHANGEABILITY ADJUSTMENT

NOTE : • *This adjustment is extremely important. However, it is normally not required during routine service. Perform only after replacing major components(A/C head,upper/lower drum assembly,pole base assembly,etc).*
• *Before using costly alignment tape,use a spare tape and confirm correct operation of the tape transport.*

2.7.1 Tape pattern

(1) Connect the oscilloscope to TP106(PB FM/COL) on the Main board.Use TP111(D.FF) on the Main board as a trigger.
(2) Playback the SP stairstep portion of the alignment tape. Confirm that the FM waveform appears as indicated in Fig.2-7-1.
(3) Set the manual tracking position by simultaneously pressing the CH " ▲ " and " ▼ " buttons.
(4) Operate the tracking adjustment (press the CH buttons during playback) and set for maximum playback FM waveform.
(5) By operating the CH button,vary the FM waveform from maximum to minimum and vice versa to confirm that the waveform varies nearly in a flat shape as shown in Fig.2-7-1.
(6) When the FM waveform does not remain flat during this process,first slightly loosen the set screw located at the bottom of the guide rollers.Using the guide roller adjustment tool (Roller driver), adjust the supply and take-up guide rollers (refer to Fig.2-7-2) to obtain the correct waveform as indicated in Fig.2-7-3.
(7) By pressing the CH buttons several times,vary the FM waveform output from maximum to minimum (and vice versa) gradually,and confirm that the variation proceeds in flat shape, as shown in Fig.2-7-3.
(8) Next playback the LP stairstep portion of the alignment tape and adjust the tracking control from maximum to minimum the FM waveform,confirm that FM waveform variation is always flat.
(9) Record the signal and play it back in both of the SP and LP mode,confirm that the FM waveform is flat in both mode.
(10) After adjustments,tighten the set screw of the guide rollers.
(11) Confirm that the tape wrinking does not occur at the roller upper or lower limits as indicated in Fig.2-7-4.

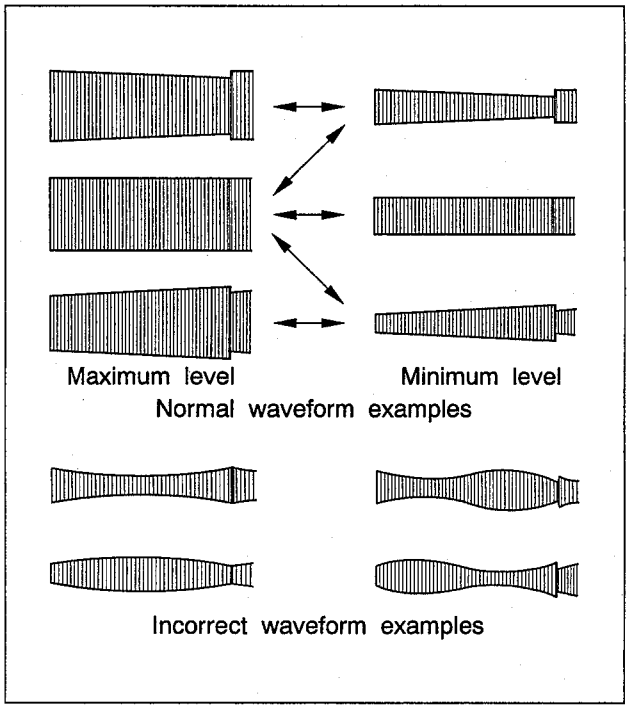


Fig. 2-7-1

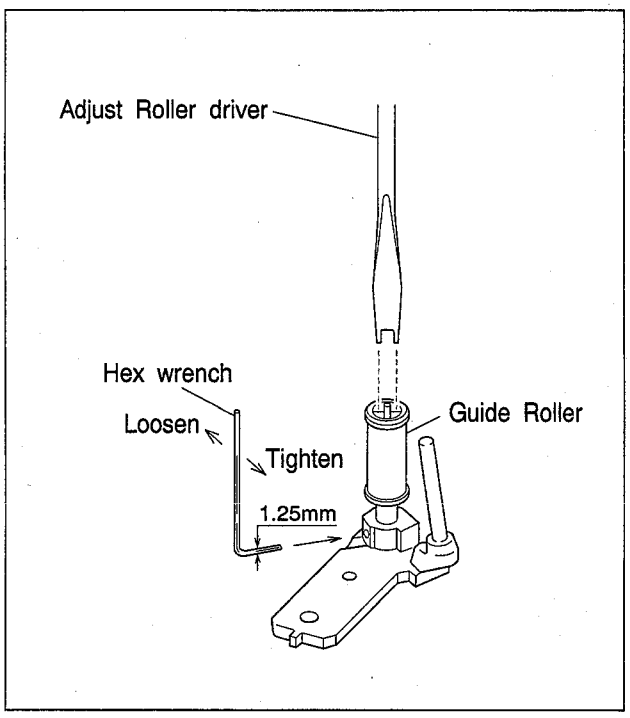


Fig. 2-7-2

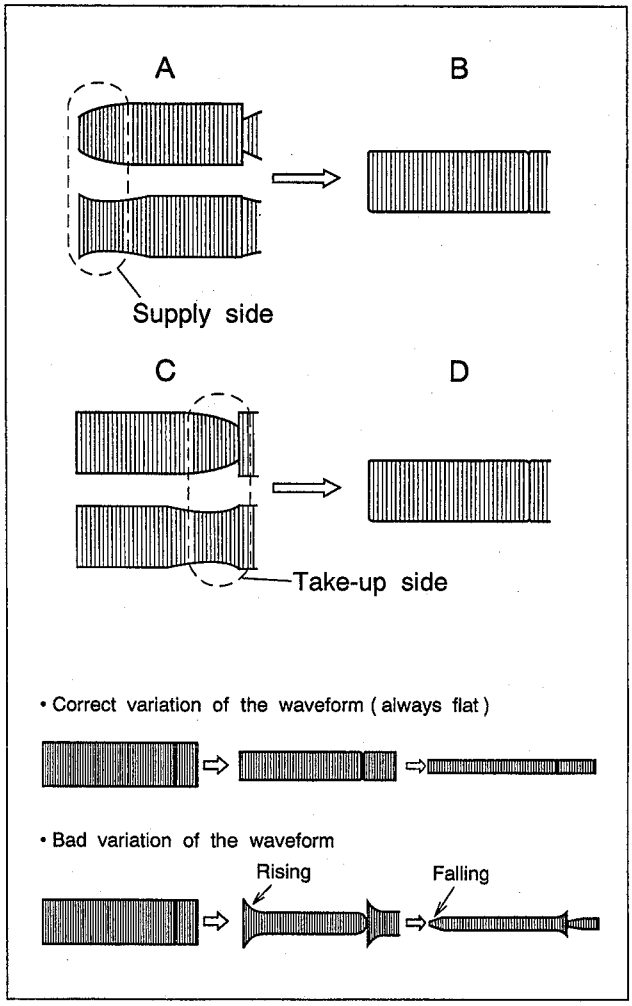


Fig. 2-7-3

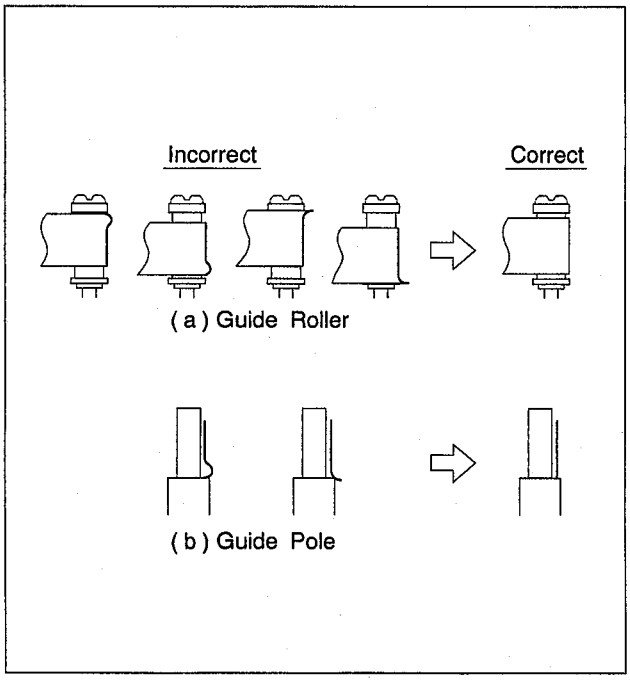


Fig. 2-7-4

2.7.2 A/C head height & azimuth

NOTE : • *Temporarily set A/C head height as indicated in Fig. 2-5-4.*
• *Use spare tape to check the transport and confirm the tape is not scratched or damaged.*

1. Tilt

(1) Use spare tape and set for playback.
(2) Turn screw (3) clockwise to where the tape curls just slightly at the TU guide pole bottom flange as shown in Fig.2-7-5.
(3) Then slowly turn screw (3) counterclockwise to where the curling ceases.

2. Height

(1) Connect CH-1 of a dual trace oscilloscope to Audio Out.
(2) Connect CH-2 to TP1101(CTL. P) of the Main board assembly and use the ALT mode.
(3) Playback the SP stairstep portion of the alignment tape.
(4) Adjust screws (1),(2) and (3) for maximum audio output and control pulse level.

3. Azimuth

(1) Connect the oscilloscope to Audio Out.
(2) Playback the SP stairstep portion of the alignment tape.
(3) Adjust screw (2) so that the audio output is both maximum and with minimum fluctuation.

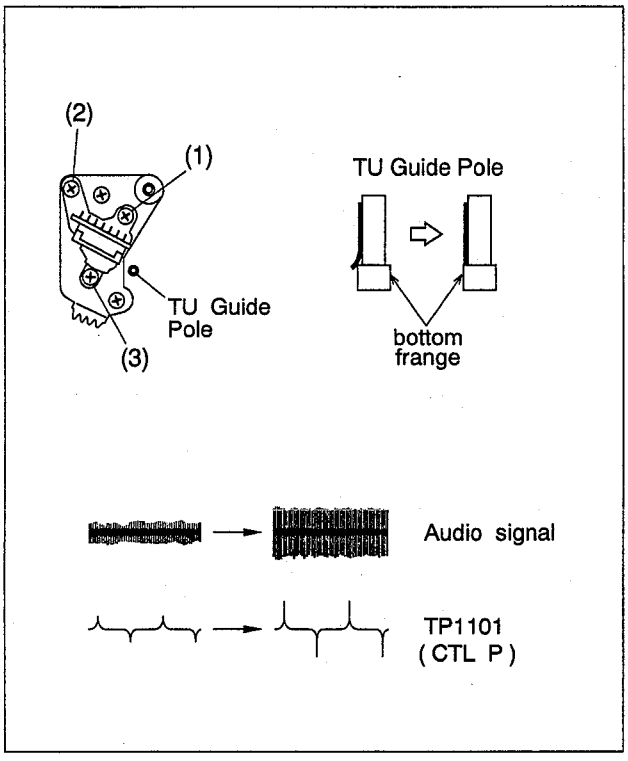


Fig. 2-7-5

2.7.3 A/C head phase(X-value)

(1) Connect the oscilloscope to TP106(PB FM/COL) on the Main board.Use TP111(D.FF) on the Main board as a trigger.
(2) Playback the SP stairstep portion of the alignment tape then press the CH "▲" or "▼" button once during playback mode.
(3) Set the neutral manual tracking position by simultaneously pressing the CH "▲" and "▼" buttons.
(4) If adjustment is required,slightly loosen screws (4) and (5). Set A/C head positioning tool on the A/C head adjusting boss as indicated in Fig.2-7-6.
(5) Turn the tool first to position the A/C head fully toward the capstan. Then gradually return it toward the drum and stop at the position of maximum FM waveform output level as shown in Fig.2-7-7.
(6) Tighten screw (5). Remove the tool and tighten screw (4).
(7) Eject the SP alignment tape and then re-insert the LP alignment tape.
(8) Playback the LP stairstep portion of the alignment tape then press the CH "▲" or "▼" button once during playback mode.
(9) Set the neutral manual tracking position by simultaneously pressing the CH "▲" and "▼" buttons.
(10) Confirm maximum playback FM waveform output level as shown in Fig.2-7-7.
(11) If not maximum,slightly loosen the screws (4) and (5). Use the tool and adjust the head position for the nearest maximum point. Then tighten screws (4) and (5).

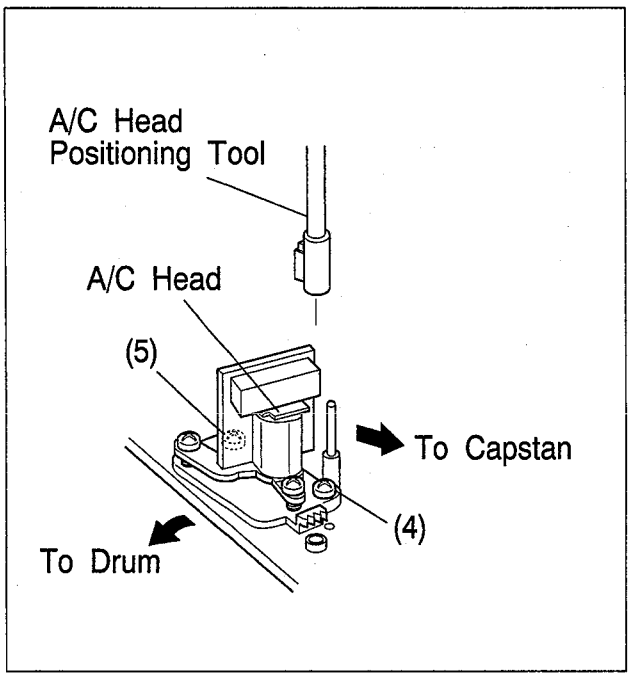


Fig. 2-7-6

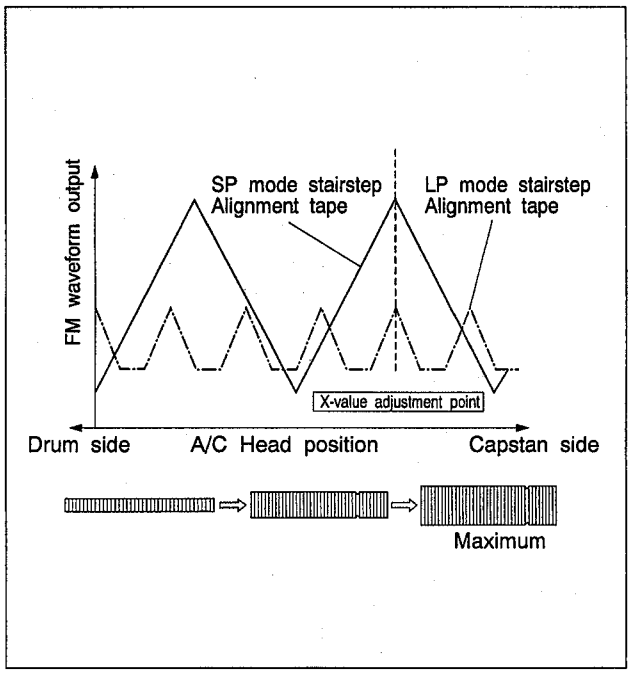


Fig. 2-7-7

2.7.4 Tension pole position

(1) Set for playback mode using MECHANISM SERVICE MODE(See SECTION 1 DISASSEMBLY).
(2) Turn the adjust pin so that the tension arm assembly does not touch ϕ2.5 pole on the outside.
(3) After adjustment,use the back tension cassette gauge and set for the playback mode.
(4) Confirm reading of 29 to 46 g-cm. (2.8 – 4.5 $\times 10^{-3}$ N-m)

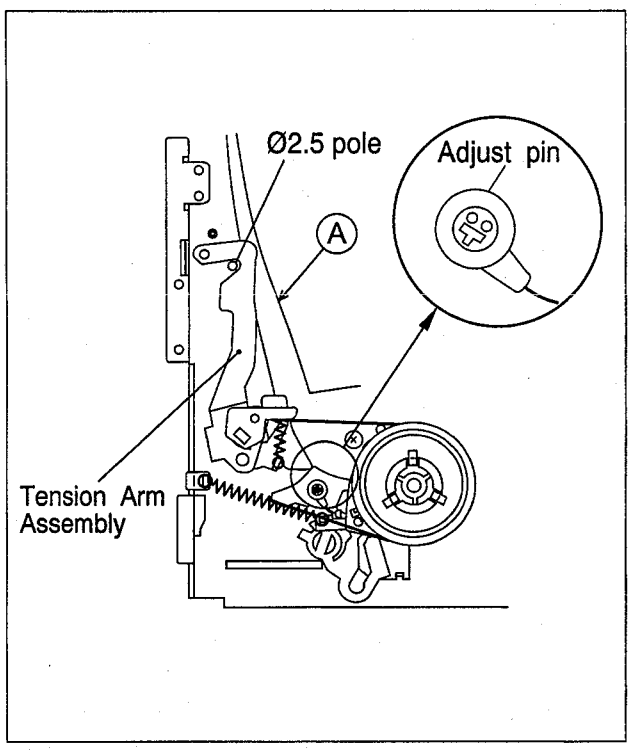


Fig. 2-7-8

SECTION 3
ELECTRICAL ADJUSTMENT

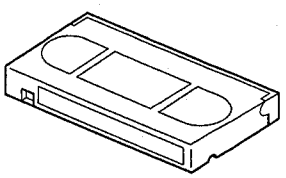
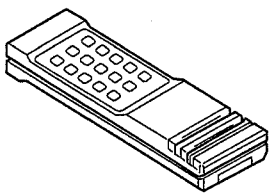
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is available.

3.1.1 Required test equipment

① Color television or monitor
② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
③ Frequency counter
④ Digital voltmeter
⑤ Signal generator: RF/IF sweep/maker
⑥ Signal generator: PAL color bar, stairstep
⑦ Recording tape
⑧ Digit-key remote controller(provided)

3.1.2 Required adjustment tools

Alignment tape (SP,stairstep) 4822 397 30262	Presetting unit 4822 395 90915
	

3.1.3 Color bar signal,color bar pattern

● Color bar signal

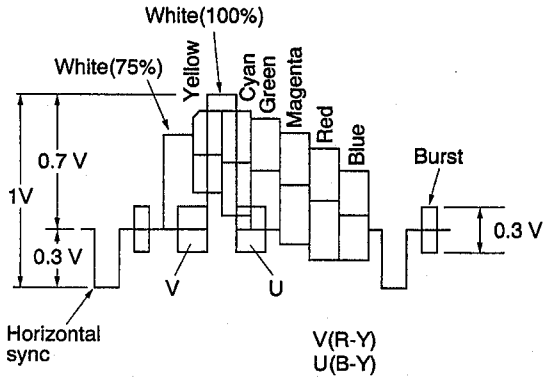


Fig.3-1-1 Color bar signal waveform

● Color bar pattern

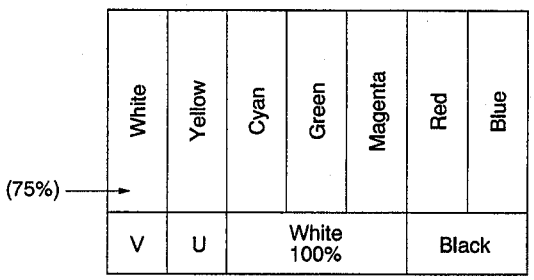


Fig.3-1-2 Color bar pattern

3.2 SERVO CIRCUIT

Notes: • *Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Depress button "A" on presetting unit to VCR to "code receive" mode.*

3.2.1 PB switching point

Signal	• Alignment tape, Stairstep
Mode	• PB
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Trigger slope (–)	• TP111(DRUM FF)
Adjustment tool	• Presetting unit
Specification	• 6.5 ± 0.5H

(1) Connect an oscilloscope to VIDEO OUT TERMINAL and external trigger from TP111 (negative slope).
(2) Playback the stairstep signal of the alignment tape.
(3) Press the "O" button of the presetting unit.
(4) The adjustment is performed automatically. Once the adjustment is performed, the VCR will go into the STOP mode.

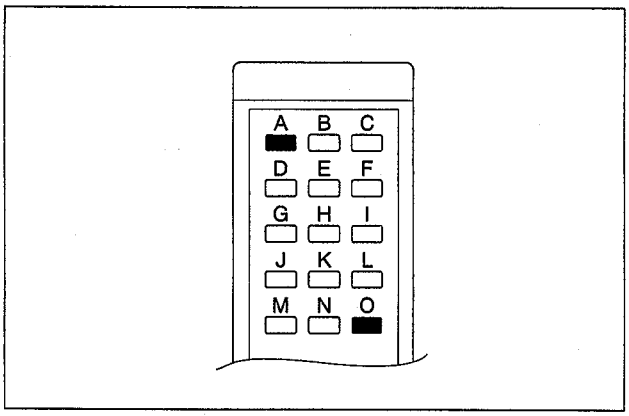


Fig.3-2-1 Presetting unit

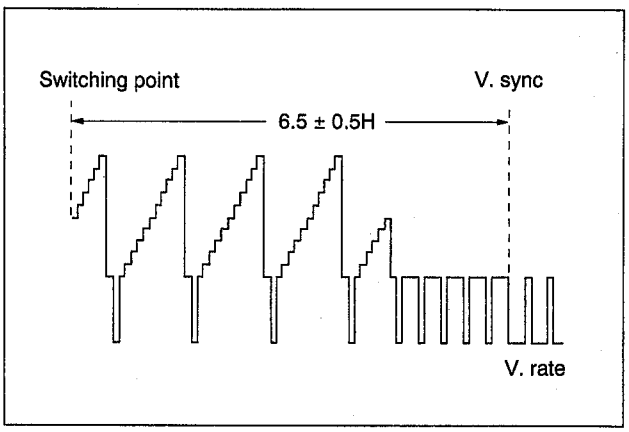


Fig.3-2-2 PB switching point

3.2.2 Slow tracking preset

Signal	• Tuner or color bar
Mode	• SP, REC → PB(SLOW) (NTSC, PAL) • LP/EP REC → PB(SLOW) (LP : PAL, EP : NTSC) (VR497, VR597 ONLY)
Equipment	• TV-Monitor
Adjustment tool	• Presetting unit
Specification	• Minimum noise

Note : *Depress button "A" on presetting unit to VCR to "code receive" mode.*
Use only buttons "B" and "C", depressing other buttons during adjustment may cause adjustment errors.

(1) Record a PAL color bar signal in the SP mode.
(2) Playback recorded signal on the FWD slow mode.
(3) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "B " or "C " buttons of the presetting unit.
(4) Depress the STOP button.
(5) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
(6) Repeat steps (1) to (5) in NTSC color bar.
(7) Repeat steps (1) to (6) in LP/EP mode.

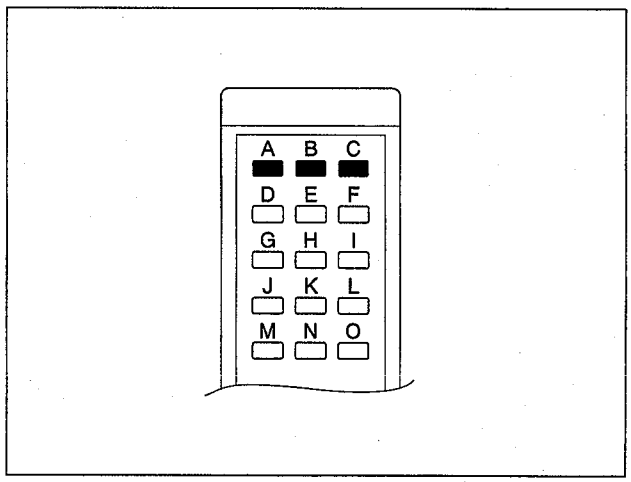


Fig.3-2-3 Presetting unit

3.3 ON SCREEN CIRCUIT

Notes: • *Unless oterwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.*
• *Depress button "A" on presetting unit to VCR to "code receive" mode.*

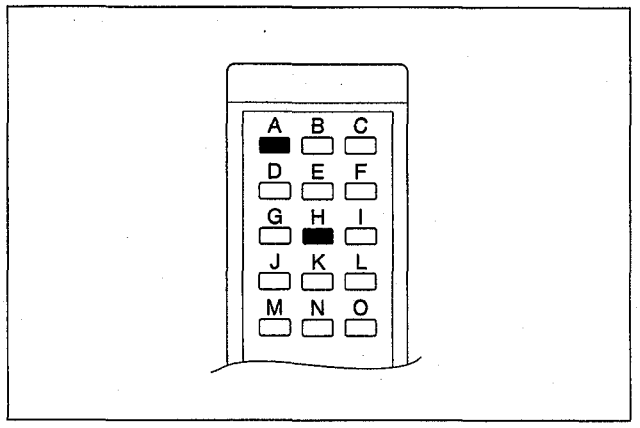


Fig.3-3-1 Presetting unit

3.3.1 Character position

Signal	• No signal
Mode	• EE
Equipment	• TV-monitor
Adjustment tool	• Presetting unit
Specification	• Character centre

(1) Press the MENU button and display the on screen character.
(2) Press "H" button on the presetting unit.
(3) Adjust CH "▲" or "▼" button so that the character is centre position.
(4) Press the VCR/TV button on remote controller to change the indications of "0E" and "0F" on the FDP.
(5) Press "H" button on the presetting unit again to return to normal mode.

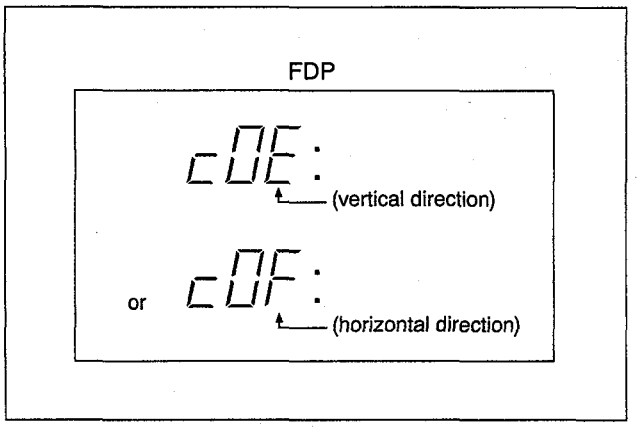


Fig.3-3-2 FDP

3.4 SYSCON CIRCUIT

Notes: • *Unless otherwise specified, all measurement point and adjustment parts are located on the MAIN BOARD.*
• *When preform this adjustment, remove the MECHANISM assembly.*

3.4.1 Timer clock

Signal	• No signal
Mode	• EE
Equipment	• Frequency counter
Measurement point	• TP702 round (SYS CLK)
Adjustment tool	• C730 (TIMER CLOCK)
Specification	• 8192.057 – 8192.074 Hz [122.0692 – 122.0695 μsec]

(1) Connect the frequency counter to TP702 round and GND.
(2) Connect the short wire between TP701 round (TEST) and GND.
(3) Short the leads of capacitor C709 once in order to reset IC701.
(4) Disconnect the short wire then connect it again quickly.
(5) Adjust C730 for 8192.057 – 8192.074 Hz.
(122.0692 – 122.0695 μsec)

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

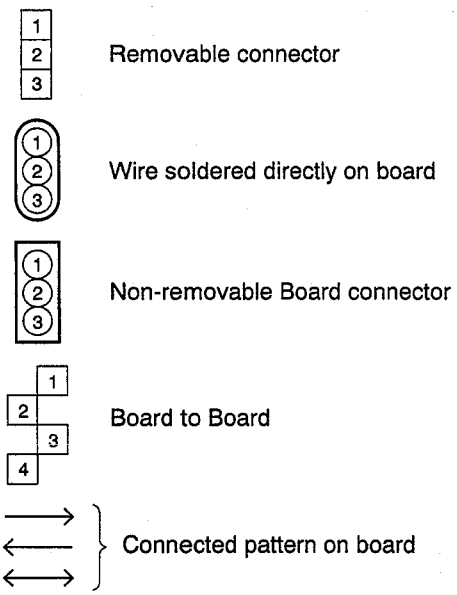
Unless otherwise specified.

1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or IN4148M (refer to parts list).

2. Indications of control voltage

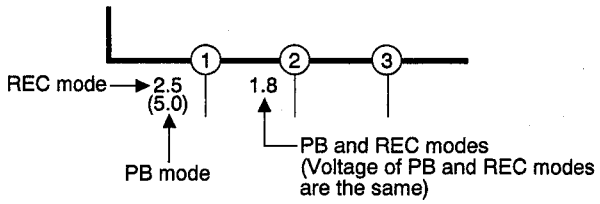
AUX : Active only at high
$\overline{\text{AUX}}$ or AUX(L) : Active at low

3. Interpreting Connector indications



4. Voltage measurement

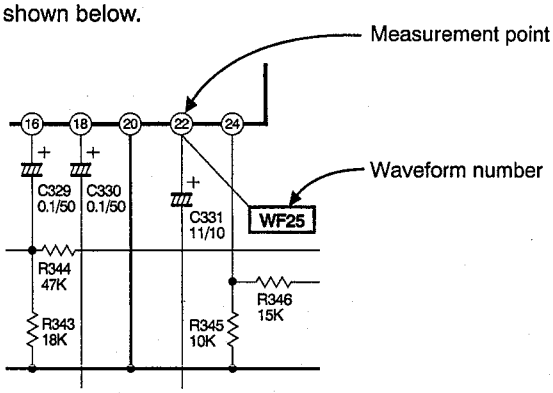
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.



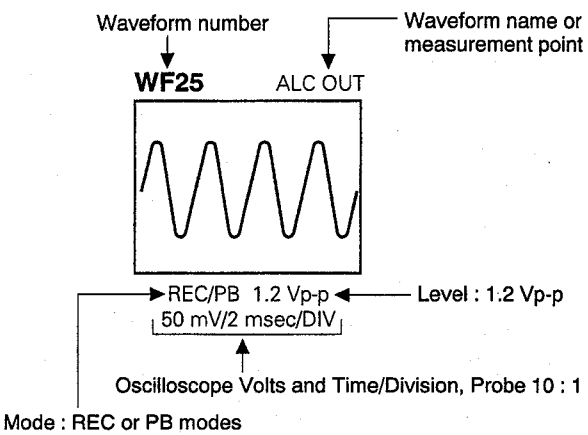
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.



5) Waveform indications



6. Signal path Symbols

The arrows indicate the signal path as follows.

Playback signal path

Playback and recording signal path

Recording signal path
(including E-E signal path)

Capstan servo path

Drum servo path

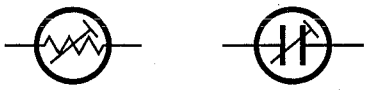
(Example)

R-Y Playback R-Y signal path

Y Recording Y signal path

7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

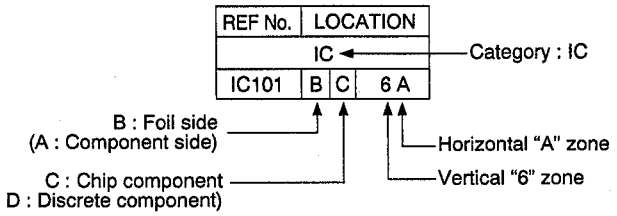
CIRCUIT BOARD NOTES

1. Foil and Component sides

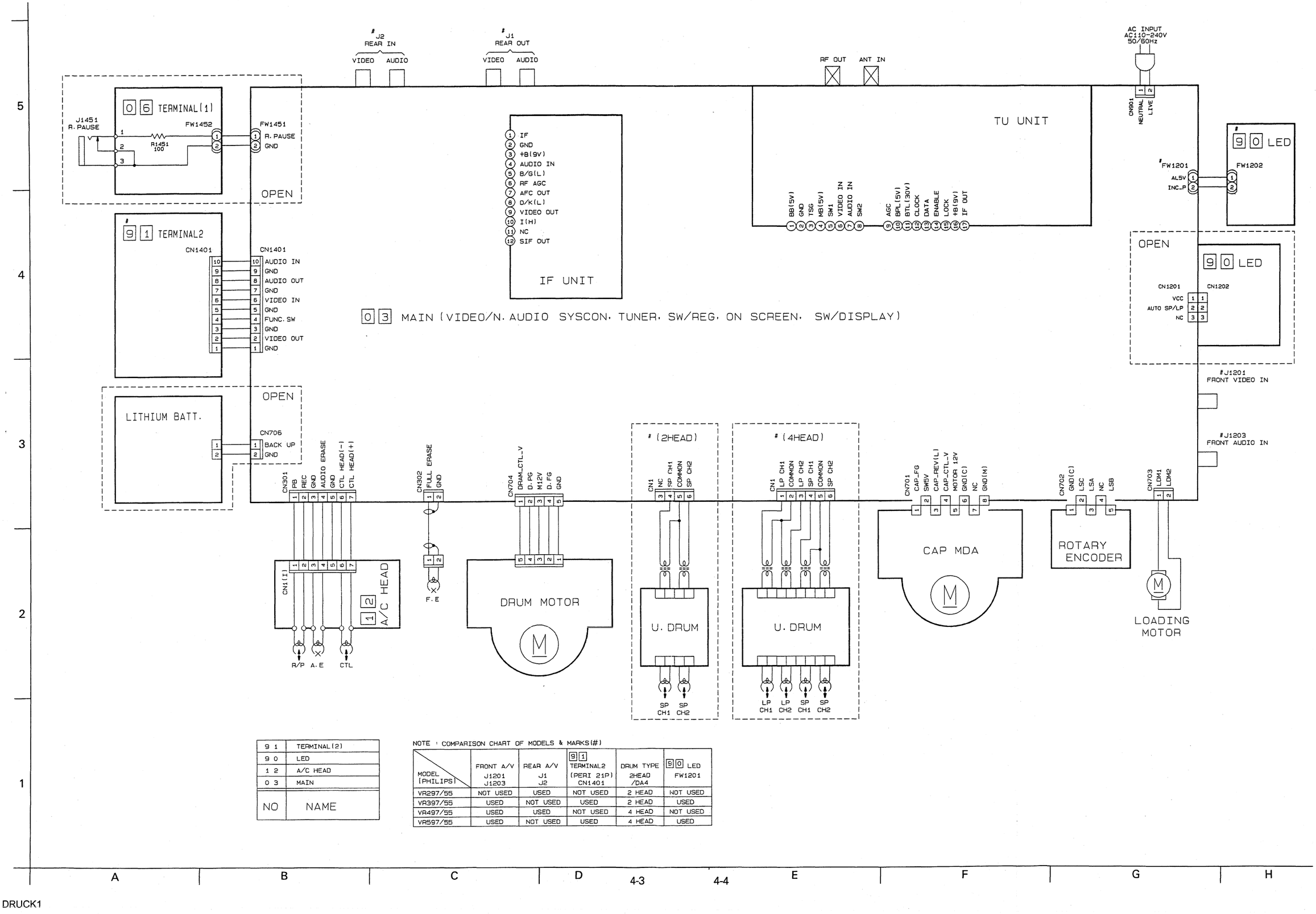
1) Foil side (B side) :
Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
Parts on the component side seen from component face (parts face) indicated.

2. Parts location guides

Parts location are indicated by guide scale on the circuit board.



4.1 BOARD INTERCONNECTIONS

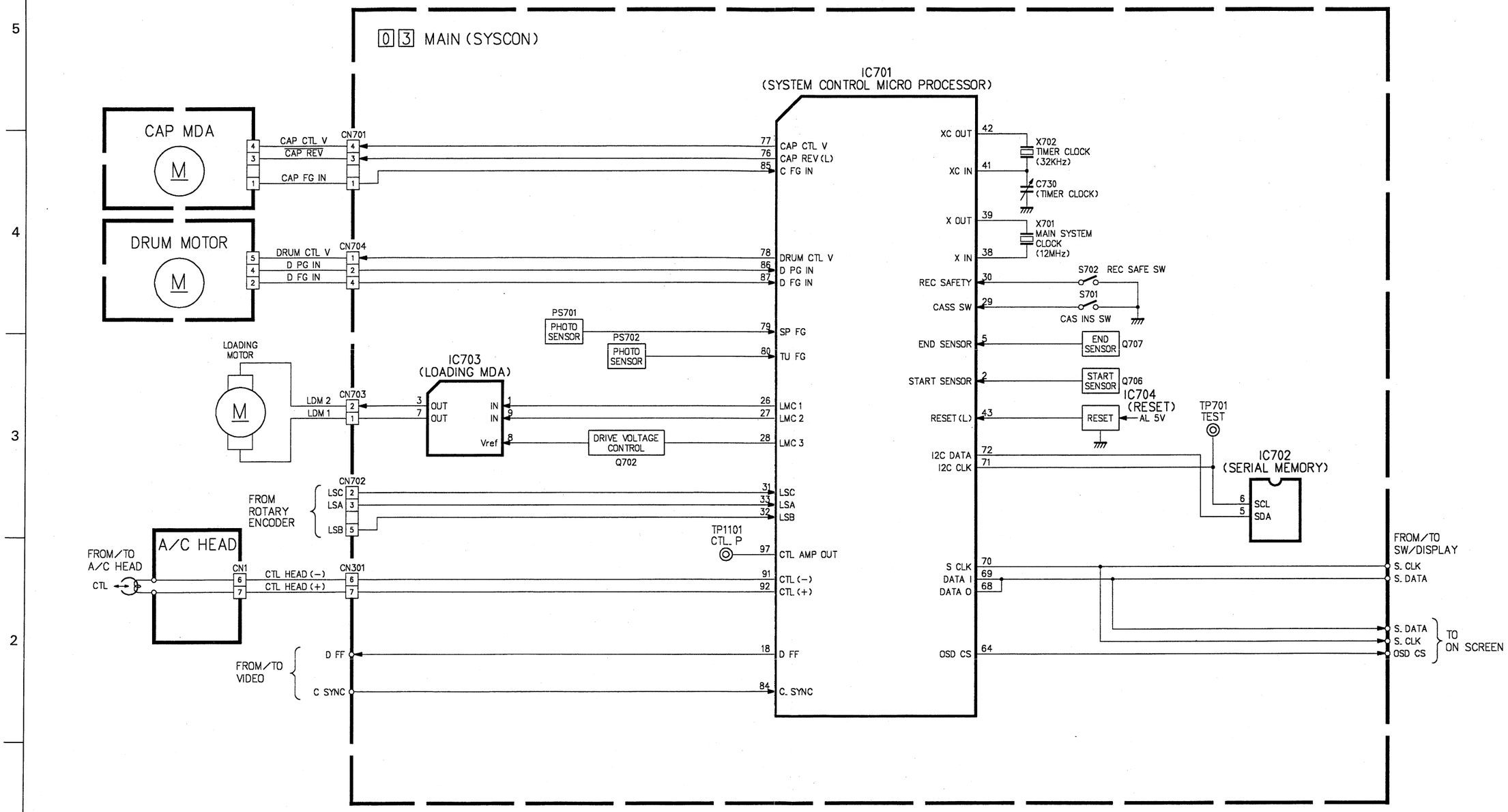


9 1	TERMINAL(2)
9 0	LED
1 2	A/C HEAD
0 3	MAIN
NO	NAME

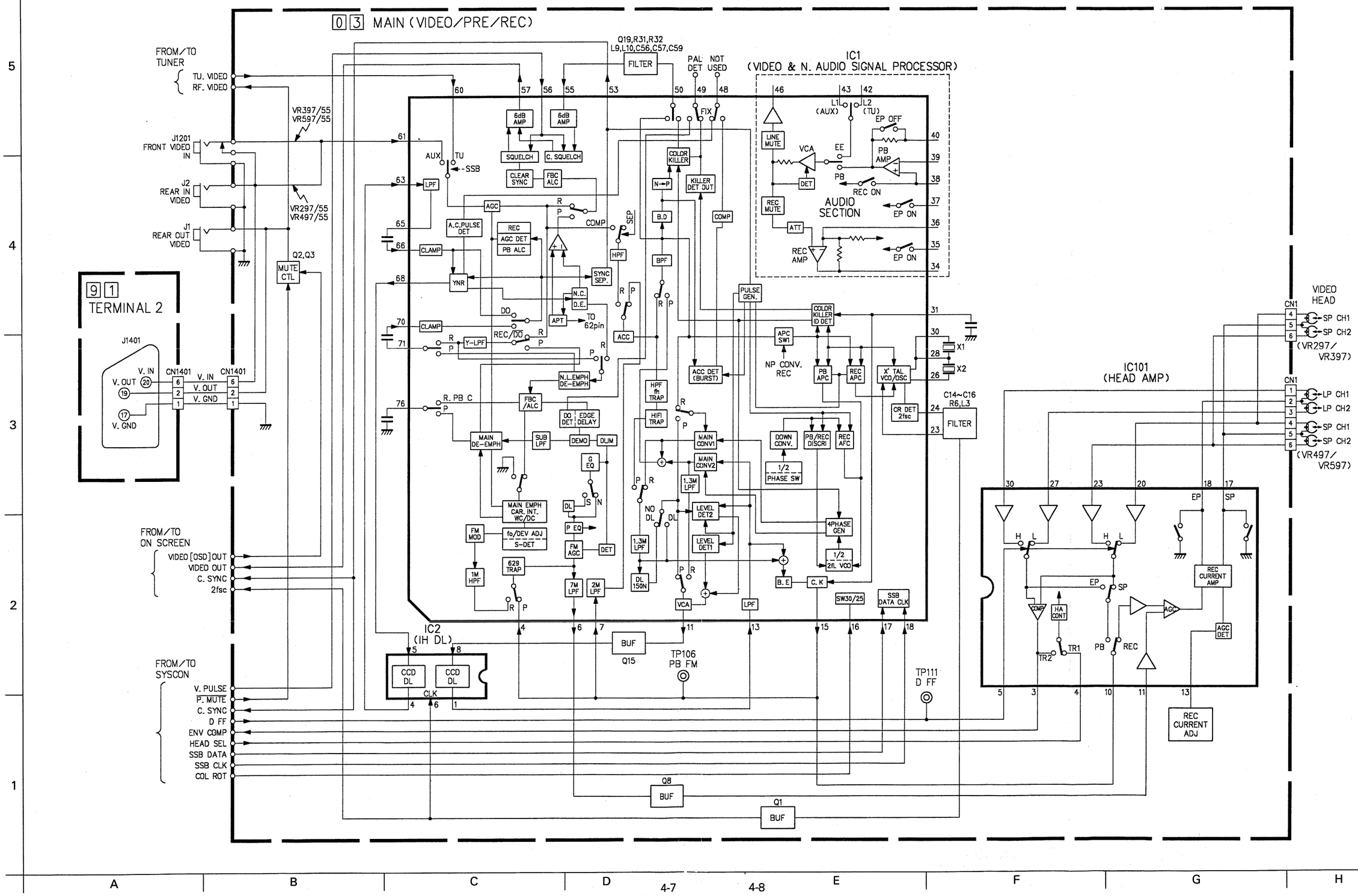
NOTE : COMPARISON CHART OF MODELS & MARKS(#)

MODEL (PHILIPS)	FRONT A/V J1201 J1203	REAR A/V J1 J2	91 TERMINAL2 (PERI 21P) CN1401	DRUM TYPE 2HEAD /DA4	90 LED FW1201
VR297/55	NOT USED	USED	NOT USED	2 HEAD	NOT USED
VR397/55	USED	NOT USED	USED	2 HEAD	USED
VR497/55	USED	USED	NOT USED	4 HEAD	NOT USED
VR597/55	USED	NOT USED	USED	4 HEAD	USED

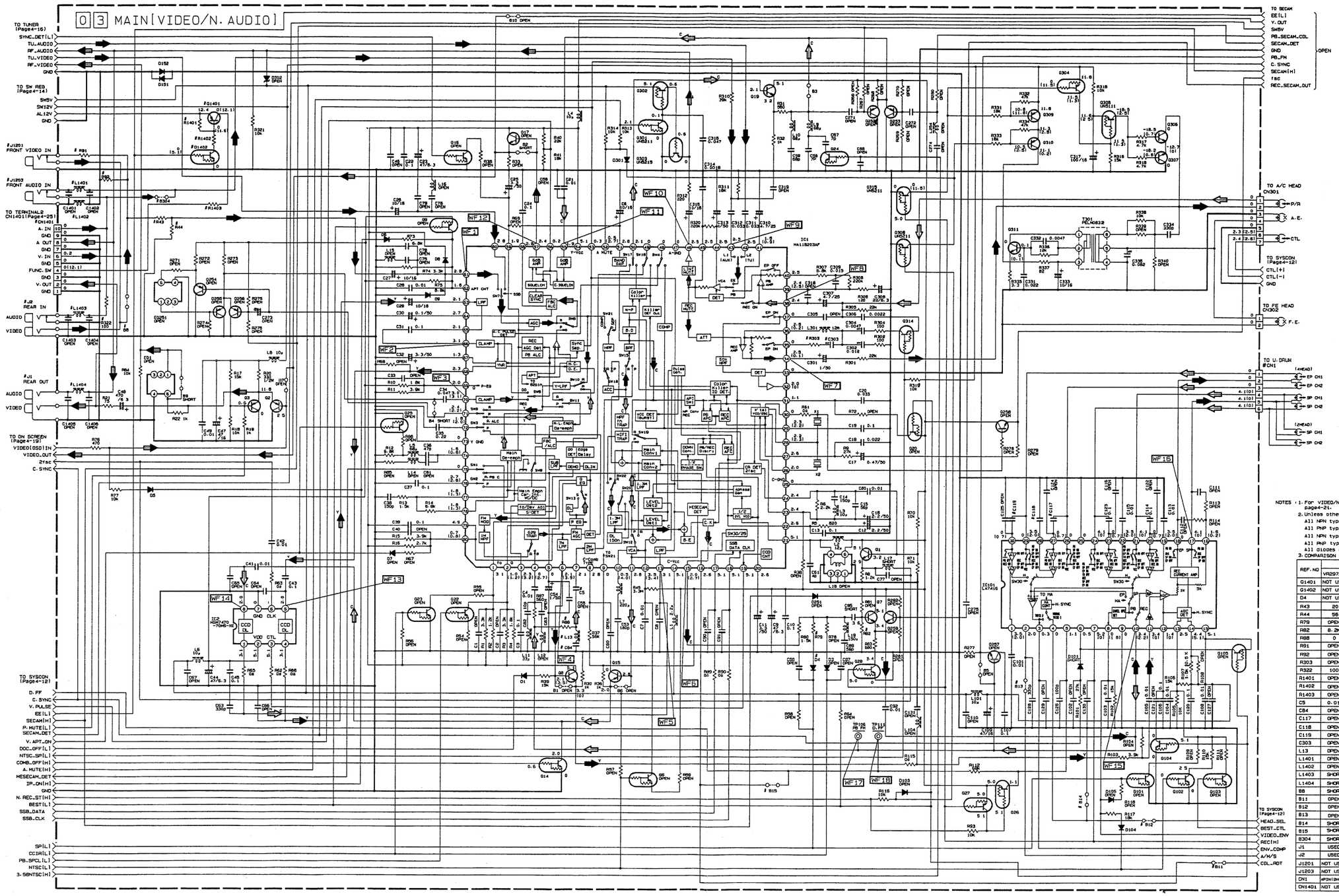
4.2 SYSTEM CONTROL BLOCK DIAGRAM



4.3 VIDEO BLOCK DIAGRAM



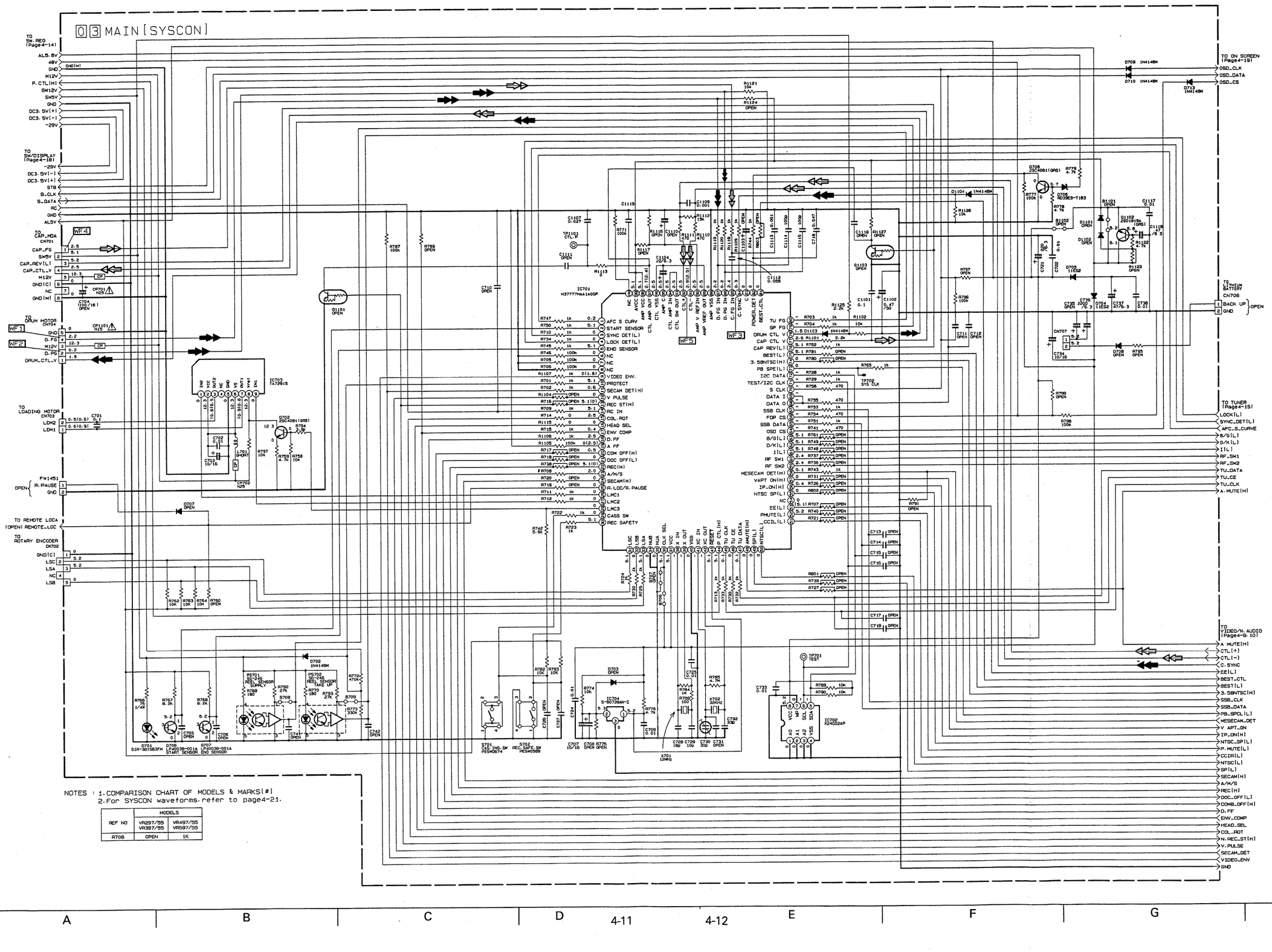
4.4 VIDEO, PRE/REC AND N.AUDIO SCHEMATIC DIAGRAM



NOTES : 1. For VIDEO/N AUDIO waveforms-please refer to page4-21.
2. Unless otherwise specified.
All NPN type transistors are 2SD1819(QRS).
All PNP type transistors are 2SB1218A(QR)
All NPN type digital transistors are UN521E.
All PNP type digital transistors are UN511E.
All diodes are 1N4148M or 1SS133.
3. COMPARISON CHART OF MODELS & MARKS(#)

REF. NO	MODELS			
	VR297/55	VR397/55	VR497/55	VR597/55
Q1401	NOT USED	USED	NOT USED	USED
Q1402	NOT USED	USED	NOT USED	USED
D4	NOT USED	NOT USED	USED	USED
R43	20	0	0	0
R44	56	OPEN	OPEN	OPEN
R79	OPEN	8.2K	8.2K	8.2K
R82	8.2K	8.2K	OPEN	OPEN
R88	0	0	2.2K	2.2K
R91	OPEN	20	20	20
R92	OPEN	56	56	56
R303	OPEN	OPEN	100	100
R322	100	OPEN	100	OPEN
R1401	OPEN	47K	OPEN	47K
R1402	OPEN	1K	OPEN	1K
R1403	OPEN	3301/2W	OPEN	3301/2W
C5	0.01	0.01	220P	220P
C84	OPEN	OPEN	0.012	0.012
C117	OPEN	OPEN	0.1	0.1
C118	OPEN	OPEN	0.01	0.01
C119	OPEN	OPEN	0.1	0.1
C303	OPEN	OPEN	0.022	0.022
L13	OPEN	OPEN	470+	470+
L1401	OPEN	SHORT	SHORT	SHORT
L1402	OPEN	SHORT	SHORT	SHORT
L1403	SHORT	OPEN	SHORT	OPEN
L1404	SHORT	OPEN	SHORT	OPEN
B8	SHORT	OPEN	OPEN	OPEN
B11	OPEN	OPEN	SHORT	SHORT
B12	OPEN	OPEN	SHORT	SHORT
B13	OPEN	OPEN	SHORT	SHORT
B14	SHORT	SHORT	OPEN	OPEN
B15	SHORT	SHORT	OPEN	OPEN
B304	SHORT	OPEN	OPEN	OPEN
J1	USED	NOT USED	USED	NOT USED
J2	USED	NOT USED	USED	NOT USED
J1201	NOT USED	USED	USED	USED
J1203	NOT USED	USED	USED	USED
CN1	4PIN(HEAD)	6PIN(Q&4)	4PIN(HEAD)	6PIN(Q&4)
CN1401	NOT USED	USED	NOT USED	USED

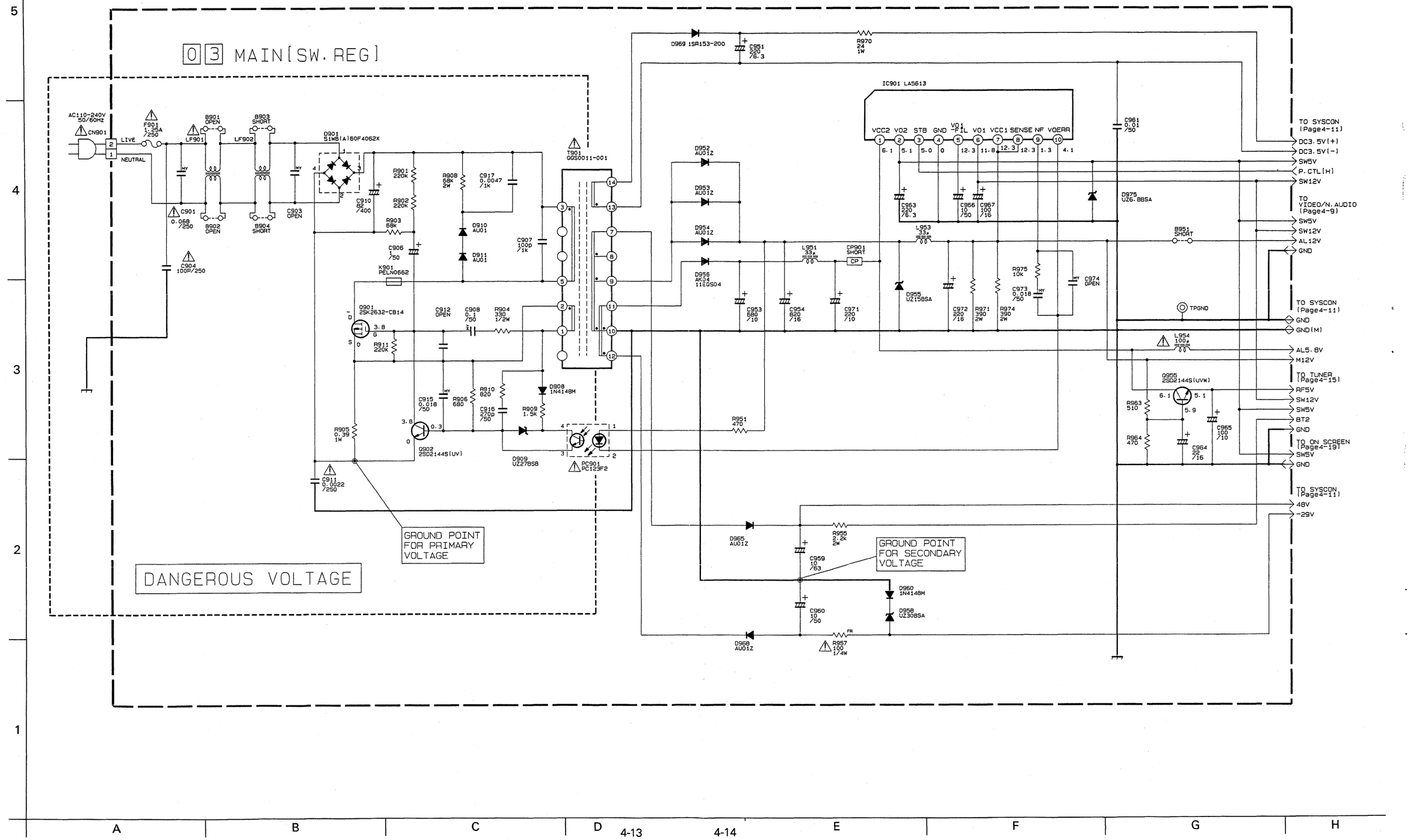
4.5 SYSTEM CONTROL SCHEMATIC DIAGRAM



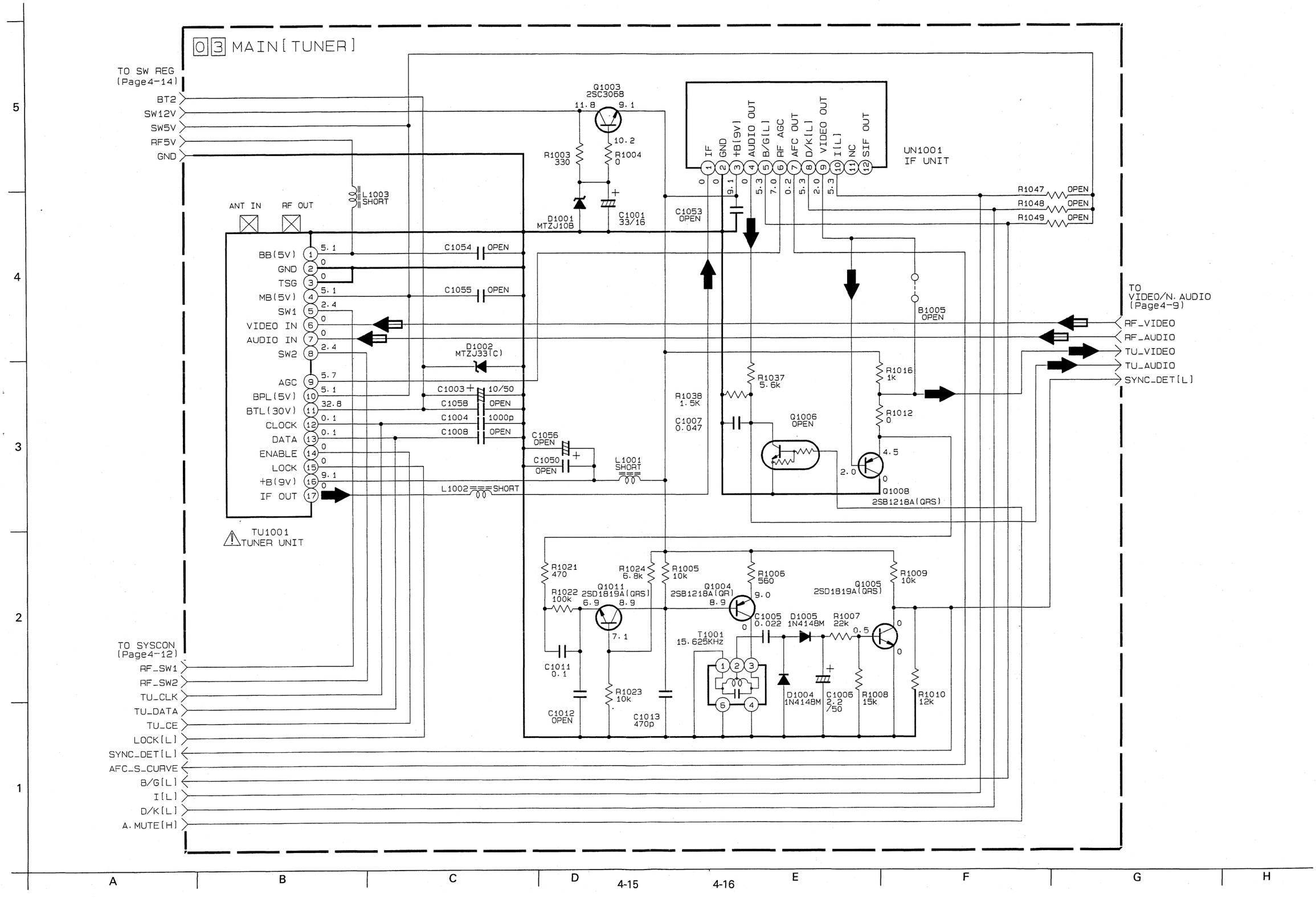
NOTES : 1. COMPARISON CHART OF MODELS & MARKS(#)
2. For SYSCON waveforms, refer to page4-21.

REF NO	MODELS	
	VR297/55 VR397/55	VR497/55 VR597/55
R708	OPEN	1K

4.6 SWITCHING REGULATOR SCHEMATIC DIAGRAM

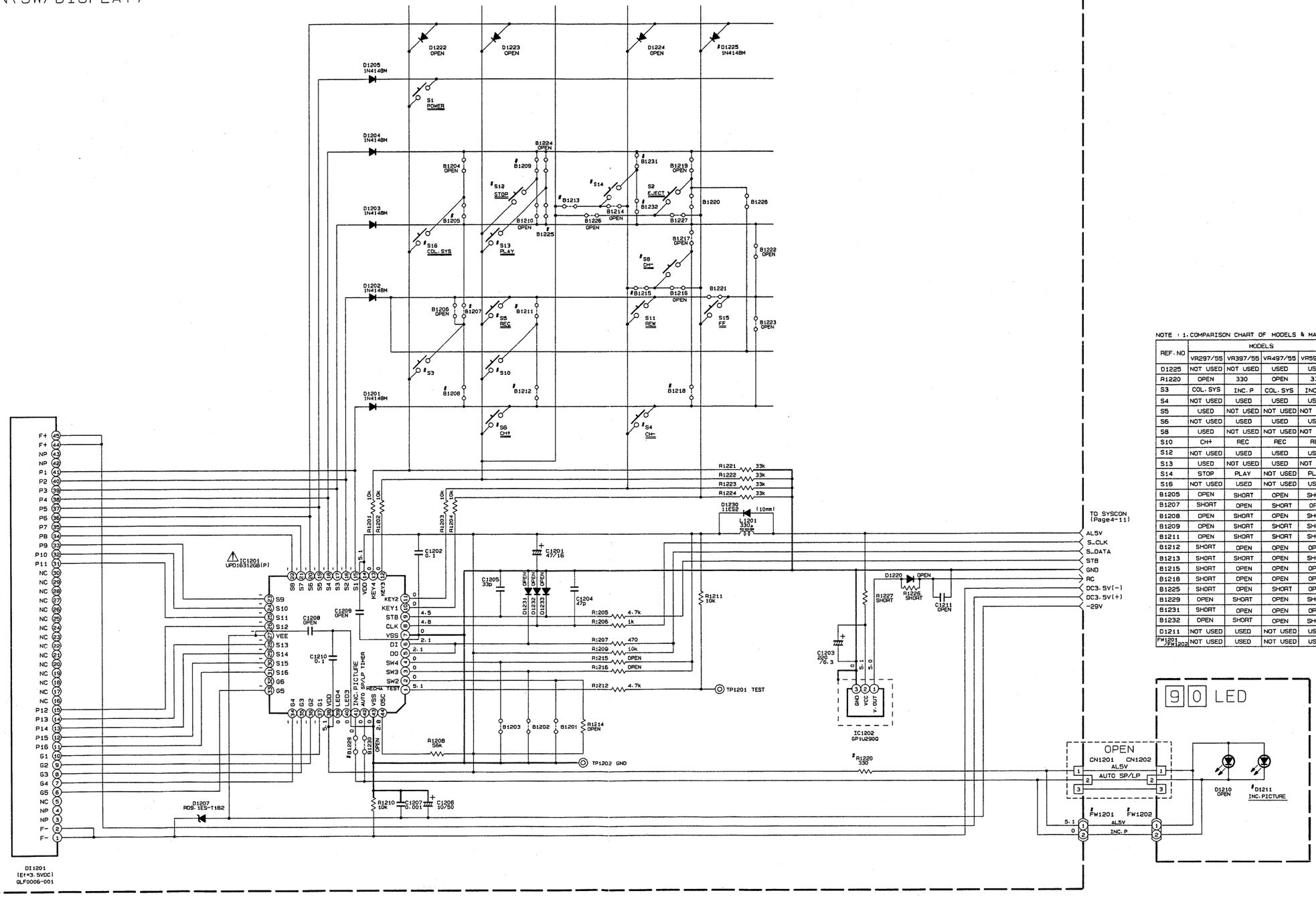


4.7 TUNER SCHEMATIC DIAGRAM



4.8 SW/DISPLAY SCHEMATIC DIAGRAM

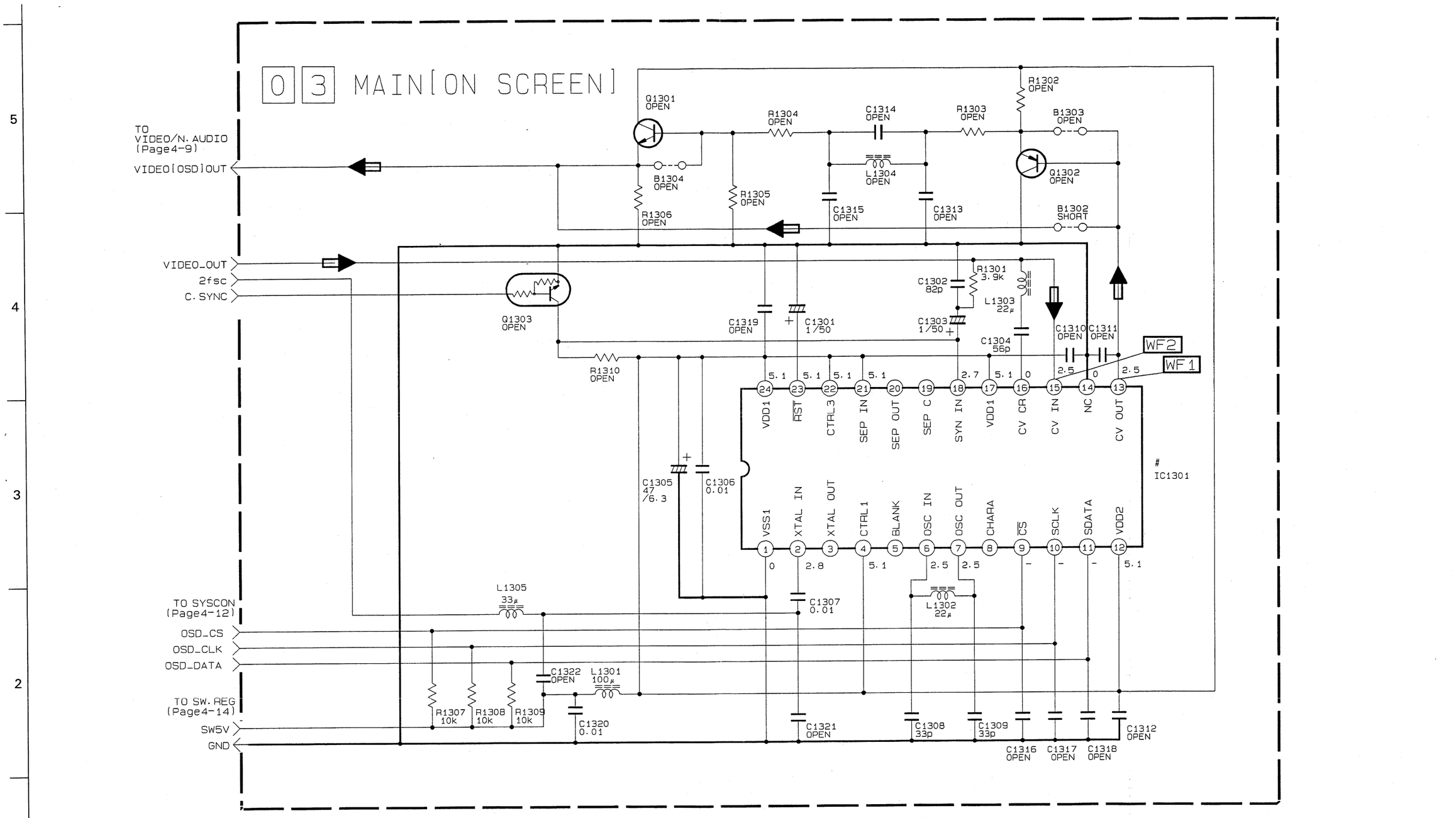
03 MAIN(SW/DISPLAY)



NOTE : 1. COMPARISON CHART OF MODELS & MARKS(#)

REF. NO	MODELS			
	VR297/55	VR397/55	VR497/55	VR597/55
D1225	NOT USED	NOT USED	USED	USED
R1220	OPEN	330	OPEN	330
S3	COL. SYS	INC. P	COL. SYS	INC. P
S4	NOT USED	USED	USED	USED
S5	USED	NOT USED	NOT USED	NOT USED
S6	NOT USED	USED	USED	USED
S8	USED	NOT USED	NOT USED	NOT USED
S10	CH+	REC	REC	REC
S12	NOT USED	USED	USED	USED
S13	USED	NOT USED	USED	NOT USED
S14	STOP	PLAY	NOT USED	PLAY
S16	NOT USED	USED	NOT USED	USED
B1205	OPEN	SHORT	OPEN	SHORT
B1207	SHORT	OPEN	SHORT	OPEN
B1208	OPEN	SHORT	OPEN	SHORT
B1209	OPEN	SHORT	SHORT	SHORT
B1211	OPEN	SHORT	SHORT	SHORT
B1212	SHORT	OPEN	OPEN	OPEN
B1213	SHORT	SHORT	OPEN	SHORT
B1215	SHORT	OPEN	OPEN	OPEN
B1218	SHORT	OPEN	OPEN	OPEN
B1225	SHORT	OPEN	SHORT	OPEN
B1229	OPEN	SHORT	OPEN	SHORT
B1231	SHORT	OPEN	OPEN	OPEN
B1232	OPEN	SHORT	OPEN	SHORT
D1211	NOT USED	USED	NOT USED	USED
FW1201 FW1202	NOT USED	USED	NOT USED	USED

4.9 ON SCREEN SCHEMATIC DIAGRAM



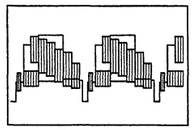
NOTES : 1. For ON SCREEN waveforms, refer to page4-21.
2. COMPARISON CHART OF MODELS & MARKS(#)

REF. NO	MODELS	
	VR297/55 VR497/55	VR397/55 VR597/55
IC1301	LC74784-9665	LC74783-9194

WAVEFORMS

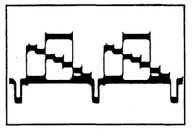
— VIDEO/N. AUDIO —

WF1 IC1-61



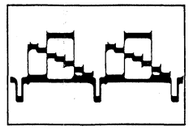
REC 1.0Vp-p
50mV/20µsec/DIV

WF2 IC1-66



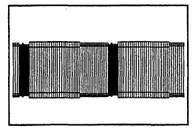
PB 0.68Vp-p
20mV/20µsec/DIV

WF3 IC1-70



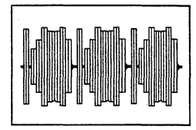
REC/PB 0.68Vp-p
20mV/20µsec/DIV

WF4 IC1-6



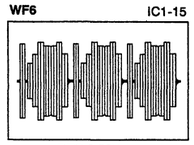
REC 0.51Vp-p
20mV/5msec/DIV

WF5 IC1-13



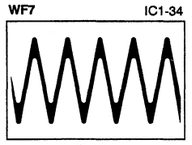
PB 0.54Vp-p
20mV/20µsec/DIV

WF6 IC1-15



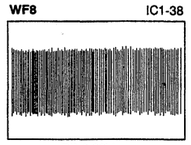
REC 0.52Vp-p
20mV/20µsec/DIV

WF7 IC1-34



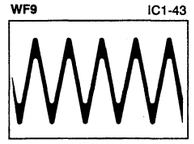
REC 2.3Vp-p
50mV/1msec/DIV

WF8 IC1-38



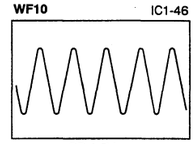
PB 0.02Vp-p
0.5mV/5msec/DIV

WF9 IC1-43



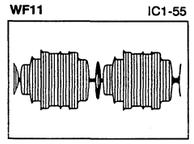
REC 0.3Vp-p
10mV/1msec/DIV

WF10 IC1-46



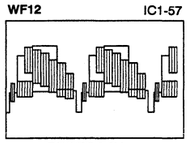
PB 1.6Vp-p
50mV/1msec/DIV

WF11 IC1-55



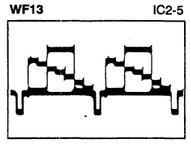
PB 0.63Vp-p
20mV/20µsec/DIV

WF12 IC1-57



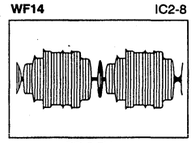
REC/PB 2.8Vp-p
0.1V/20µsec/DIV

WF13 IC2-5



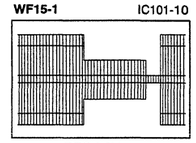
PB 0.55Vp-p
20mV/20µsec/DIV

WF14 IC2-8



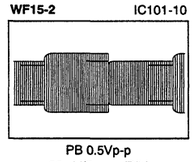
PB 0.5Vp-p
20mV/20µsec/DIV

WF15-1 IC101-10



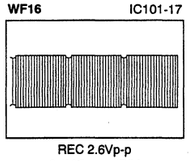
REC 0.3Vp-p
20mV/5msec/DIV

WF15-2 IC101-10



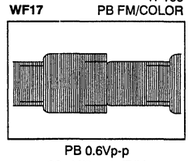
PB 0.5Vp-p
20mV/5msec/DIV

WF16 IC101-17



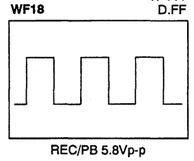
REC 2.6Vp-p
0.1V/5msec/DIV

WF17 TP106 PB FM/COLOR



PB 0.6Vp-p
20mV/5msec/DIV

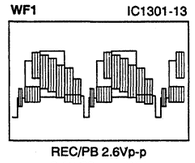
WF18 TP111 D.FF



REC/PB 5.8Vp-p
0.2V/10msec/DIV

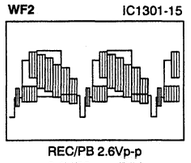
— ON SCREEN —

WF1 IC1301-13



REC/PB 2.6Vp-p
0.1V/20µsec/DIV

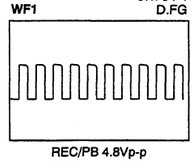
WF2 IC1301-15



REC/PB 2.6Vp-p
0.1V/20µsec/DIV

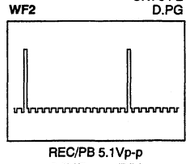
— SYSCON —

WF1 CN704-4 D.FG



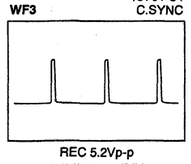
REC/PB 4.8Vp-p
0.2V/1msec/DIV

WF2 CN704-2 D.PG



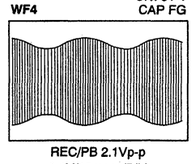
REC/PB 5.1Vp-p
0.2V/5msec/DIV

WF3 IC701-84 C.SYNC



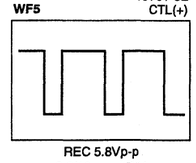
REC 5.2Vp-p
0.2V/20µsec/DIV

WF4 CN701-1 CAP FG



REC/PB 2.1Vp-p
0.1V/10msec/DIV

WF5 IC701-92 CTL(+)



REC 5.8Vp-p
0.2/10msec/DIV

COMPONENT PARTS LOCATION GUIDE

CAPACITOR

REF.NO.	LOCATION
C1	B C 8K
C2	B C 8K
C3	B C 8L
C4	B C 9K
C5	B C 9L
C6	A C D 7N
C7	B C 9L
C8	B C D 10K
C9	A D D 5H
C10	A D D 9L
C11	A D D 10L
C12	A D D 10M
C13	B C D 10M
C14	B C D 10M
C15	B C D 10M
C16	A D D 10M
C17	A D D 10M
C18	B C D 9M
C19	B C D 9N
C20	B C D 9N
C21	B C D 6N
C22	B C D 7N
C23	A C D 6N
C24	B C D 7M
C25	A C D 6M
C26	A D D 6L
C27	A C D 6J
C28	B C D 7M
C29	A C D 7L
C30	A C D 7L
C31	B C D 7L
C32	A C D 7K
C33	B C D 7K
C34	B C D 7K
C35	B C D 7K
C36	B C D 8J
C37	B C D 8K
C38	B C D 8J
C39	B C D 8K
C40	B C D 8K
C41	B C D 7I
C42	B C D 6I
C43	B C D 7J
C44	A B C D 8I
C45	B C D 7J
C46	B C D 7N
C47	A C D 19N
C48	A C D 20O
C49	B C D 20N
C53	B C D 10J
C54	A C D 9K
C55	B C D 9K
C56	B C D 6L
C57	B C D 6K
C58	B C D 6M
C59	B C D 6L
C60	B C D 9L
C61	B C D 9M
C63	B C D 8I
C64	B C D 7J
C65	B C D 7I
C66	B C D 7J
C67	B C D 7I
C75	B C D 7L
C76	B C D 6M
C77	B C D 11L
C78	B C D 7L
C79	B C D 7M
C80	B C D 11M
C81	B C D 8I
C82	B C D 9J
C83	B C D 9J
C84	B C D 10J
C85	B C D 10L
C86	B C D 6K
C87	B C D 10K
C88	B C D 10K
C89	B C D 10L
C90	B C D 9L
C91	B C D 9L
C92	B C D 9L
C101	B C D 15O
C102	B C D 14N
C103	B C D 14O
C104	B C D 14O
C105	B C D 14N
C106	B C D 14O
C107	B C D 14O
C108	B C D 13O
C109	A C D 13O
C110	B C D 13O
C111	B C D 14P
C112	B C D 14P
C113	B C D 14O
C114	B C D 14P
C115	B C D 14O
C116	B C D 14O
C117	B C D 15P
C118	B C D 15O
C119	B C D 15P
C120	B C D 13O
C121	B C D 14N
C122	B C D 14O
C123	B C D 14O
C124	B C D 15O
C125	B C D 15O
C126	B C D 15O
C127	B C D 13M
C128	B C D 15O
C129	B C D 16O
C130	B C D 16O
C131	B C D 11J
C251	A C D 16K
C252	A C D 15L
C253	B C D 15L
C254	B C D 15L
C255	B C D 15L
C256	A C D 14L
C257	B C D 14L
C258	A C D 14L
C259	A D D 14L
C260	B C D 14L
C261	B C D 14M
C262	B C D 14M
C263	B C D 14M
C264	B C D 14M
C265	B C D 15M
C266	B C D 15M
C267	B C D 15M
C268	A C D 15M
C269	A D D 15M
C270	B C D 15M
C271	B C D 6K
C272	B C D 6J
C273	A C D 7J
C274	B C D 6J
C275	A C D 7G
C276	B C D 14M
C301	A D D 9N
C302	A D D 8O
C303	A D D 9O
C304	A D D 8O
C305	B C D 9N
C306	B C D 8O
C307	A D D 8N
C308	A D D 8O
C309	B C D 8N
C310	A B C D 8N
C311	B C D 8N
C312	B C D 8N
C313	A B C D 7O
C314	B C D 7O
C315	A B C D 7N
C316	B C D 7O
C317	A B C D 8P
C318	B C D 8N
C319	B C D 8N
C331	B C D 9P
C332	B C D 9P
C333	A B C D 10P
C334	B C D 10P
C335	A B C D 9P
C701	B C D 9P
C702	B C D 7P
C703	A D D 7P
C704	A D D 11N
C705	B C D 4J
C706	B C D 16I
C707	A D D 15E
C708	B C D 15E
C709	B C D 15E
C710	B C D 11F
C711	B C D 16I
C712	B C D 15I
C713	B C D 15I
C714	B C D 16I
C715	B C D 15J
C716	B C D 15J
C717	B C D 16G
C718	B C D 14I
C719	B C D 16G
C721	A C D 5B
C722	B C D 6B
C724	B C D 14F
C725	B C D 15E
C726	B C D 7C
C727	B C D 17C
C728	B C D 14F
C729	B C D 14F
C730	A C D 14F
C731	B C D 15F
C732	B C D 15F
C733	B C D 15J
C734	A C D 4D
C735	A C D 2D
C736	A C D 5C
C737	A C D 5C
C738	B C D 5C
C741	B C D 16F
C742	B C D 9F
C901	A D D 4P
C903	A D D 2N
C904	A D D 4P
C906	A D D 3L
C907	A D D 3L
C908	A D D 2K
C910	A D D 2M
C911	A D D 2L
C912	B C D 2L
C915	A D D 2K
C916	A D D 3M
C917	A D D 3L
C951	A D D 11I
C953	A D D 2G
C954	A D D 3H
C959	A D D 3H
C960	A D D 1H
C961	B C D 1E
C963	A D D 2E
C964	A D D 2D
C965	A D D 2E
C966	A D D 3E
C967	A D D 2F
C971	A D D 3G
C972	A D D 3E
C973	A D D 3E
C974	A D D 21G
C1001	A D D 21L
C1003	A D D 21L
C1004	B C D 21L
C1005	B C D 21E
C1006	A D D 20F
C1007	B C D 22H
C1008	B C D 21L
C1011	B C D 22F
C1012	B C D 21F
C1013	B C D 22E
C1050	B C D 21K
C1053	B C D 21H
C1054	B C D 21P
C1055	B C D 22O
C1056	A D D 21K
C1058	B C D 21L
C1101	B C D 10O
C1102	A D D 14J
C1103	A D D 13I
C1104	A D D 12I
C1107	B C D 12J
C1109	B C D 13I
C1110	A C D 13J
C1111	B C D 12H
C1112	B C D 13J
C1113	B C D 14J
C1114	B C D 13I
C1116	A C D 5C
C1117	B C D 5B
C1118	B C D 12H
C1119	A C D 15K
C1201	A D D 12B
C1202	A D D 10B
C1203	B C D 7B
C1204	B C D 10B
C1205	A C D 10B
C1206	A C D 1F
C1207	A C D 12A
C1208	A C D 10A
C1209	A C D 10A
C1210	A C D 12B
C1211	B C D 7A
C1301	A D D 18N
C1302	B C D 18M
C1303	A D D 17N
C1304	B C D 17N
C1305	A C D 18M
C1306	B C D 18M
C1307	A C D 18M
C1308	B C D 17M
C1309	B C D 17M
C1310	B C D 17M
C1311	B C D 16M
C1312	B C D 16M
C1313	B C D 17N
C1314	B C D 17N
C1315	B C D 16N
C1316	B C D 17M
C1317	B C D 17M
C1318	B C D 16M
C1319	B C D 18M
C1320	B C D 18L
C1321	B C D 18L
C1322	B C D 18L
C1401	B C D 19B
C1402	B C D 19B
C1403	B C D 19O
C1404	B C D 20O
C1405	B C D 20O
C1406	B C D 19D
C1602	B C D 19E
C1603	B C D 19F
C1604	B C D 20E
C1605	A C D 20E
C1606	A D D 20E
C1607	B C D 20F

CONNECTOR

CN1	A	D	15P
CN301	A	D	9O
CN302	A	D	17P
CN701	A	D	10N
CN702	A	D	7F
CN703	A	D	7P
CN704	A	D	12P
CN706	A	D	6P
CN707	A	D	3D
CN901	A	D	1P
CN1201	A	D	16A
CN1202	A	D	20C
CN1401	A	D	21M
CN1601	A	D	15B

CIRCUIT PROTECTOR

CP701	A	D	11N
CP702	A	D	6O
CP901	A	D	2E
CP1101	A	D	11P

DIODE

D1	A	D	9J
D3	A	D	10K
D4	A	D	10K
D5	A	D	19N
D6	A	D	7E
D7	A	D	8J
D8	A	D	7K
D9	A	D	7M
D101	A	D	14N
D103	A	D	15K
D104	A	D	13N
D105	A	D	13N
D151	A	D	17P
D152	A	D	16P
D251	A	D	7I
D301	A	D	7O
D302	A	D	5H
D701	A	D	11I
D702	A	D	9F
D703	A	D	14E
D704	A	D	4D
D705	A	D	5C
D706	A	D	3G
D707	A	D	20J
D708	A	D	4E
D709	A	D	17L
D710	A	D	16L
D713	A	D	17L
D901	A	D	2M
D908	A	D	3L
D909	A	D	3M
D910	A	D	3K
D911	A	D	3K
D952	A	D	3I
D953	A	D	3I
D954	A	D	3I
D955	A	D	3I
D956	A	D	2I
D958	A	D	1F
D960	A	D	2F
D965	A	D	3I
D968	A	D	2H
D969	A	D	1I
D975	A	D	1E
D1001	A	D	20F
D1002	A	D	21L
D1004	A	D	21E
D1005	A	D	21F
D1101	A	D	5B
D1102	A	D	5B
D1103	A	D	14I
D1104	A	D	15K
D1201	A	D	6B
D1202	A	D	9B
D1203	A	D	6B
D1204	A	D	7B
D1205	A	D	14A
D1207	A	D	1C
D1210	A	D	20C
D1211	A	D	20C
D1220	A	D	7A
D1222	A	D	10A
D1223	A	D	2A
D1224	A	D	3A
D1225	A	D	2B
D1230	A	D	14B
D1231	A	D	9B
D1232	A	D	9B
D1233	A	D	9B

IC

IC1	B	C	8M
IC2	B	C	7J
IC101	A	D	15O
IC251	A	D	15L
IC701	B	C	14H
IC702	A	D	15K
IC703	A	D	8P
IC704	A	D	15E
IC901	A	D	2E
IC1201	B	C	11B
IC1202	A	D	8A
IC1301	A	D	18M
IC1601	B	C	20D

COIL

L1	A	D	5H
L2	A	D	10M
L3	A	D	10M
L4	A	D	6N
L5	A	D	8J
L6	A	D	10L
L7	A	D	10K
L8	A	D	20M
L9	A	D	6L
L10	A	D	6L
L11	A	D	9K
L12	A	D	9J
L13	A	D	10J
L14	A	D	8I
L15	A	D	6L
L16	A	D	7M
L17	A	D	11L
L18	A	D	10M
L19	A	D	10L
L101	A	D	13O
L104	A	D	11K
L251	A	D	15M
L252	A	D	15L
L253	A	D	14M
L254	A	D	6J
L301	A	D	9O
L701	A	D	6P
L951	A	D	2G
L953	A	D	3G
L954	A	D	2D
L1001	A	D	21J
L1002	A	D	22J
L1003	A	D	21N
L1201	A	D	14B
L1301	A	D	18L
L1302	A	D	17M
L1303	A	D	17N
L1304	A	D	16N
L1305	A	D	18L
L1401	A	D	20A
L1402	A	D	19B
L1403	A	D	19O
L1404	A	D	20O
L1601	A	D	20F

TRANSISTOR

Q1	B	C	11M
Q2	B	C	19O
Q3	B	C	19N
Q6	B	C	7H
Q7	B	C	10L
Q8	B	C	9K
Q9	B	C	7K
Q14	B	C	10G
Q15	B	C	10J
Q16	B	C	6M
Q17	B	C	6M
Q19	B	C	6L
Q20	B	C	10N
Q22	B	C	9K
Q23	B	C	9J
Q24	B	C	6K
Q25	B	C	9J
Q26	B	C	15N
Q27	B	C	15N
Q28	B	C	10K
Q101	B	C	13O
Q102	B	C	13N
Q103	B	C	13O
Q104	B	C	14N
Q105	B	C	15N
Q251	B	C	16L
Q252	B	C	6K
Q253	B	C	6J
Q254	B	C	7K
Q255	B	C	7J
Q256	B	C	7J
Q257	B	C	13M
Q258	B	C	10N
Q259	B	C	10K
Q260	B	C	14L
Q261	B	C	14M
Q262	B	C	16L
Q263	B	C	16M
Q301	B	C	7O
Q302	B	C	7O
Q303	B	C	7O
Q304	B	C	8P
Q305	B	C	9P
Q306	B	C	10P
Q307	B	C	9O
Q308	B	C	8P
Q309	B	C	9P
Q310	B	C	8P
Q311	B	C	9P
Q314	B	C	8O
Q315	B	C	7O
Q702	B	C	6P
Q706	A	D	4I
Q707	A	D	19I
Q708	B	C	9G
Q901	A	D	2L
Q902	A	D	2L
Q955	A	D	2E
Q1003	A	D	20G
Q1004	B	C	21E
Q1005	B	C	21F
Q1006	B	C	22G
Q1008	B	C	22G
Q1011	B	C	22E
Q1101	B	C	12H
Q1102	B	C	5K
Q1103	B	C	14I
Q1301	B	C	16N
Q1302	B	C	17N
Q1303	B	C	17N
Q1401	B	C	20L
Q1402	B	C	20L

RESISTOR

R1	B	C	9K
R2	B	C	8K
R3	B	C	8K
R4	B	C	8K
R5	B	C	10M
R6	B	C	10M
R8	B	C	10L
R9	B	C	9N
R10	B	C	7K
R11	B	C	7K
R12	B	C	9J
R13	B	C	8K
R14	B	C	8K
R15	B	C	8L
R16	B	C	8K
R17	A	D	20N
R18	B	C	20N
R19	A	D	19N
R20	B	C	20N
R21	B	C	20P
R22	B	C	20N
R30	B	C	9J
R31	B	C	6L
R32	A	D	6L
R33	B	C	6M
R35	B	C	6M
R36	A	D	10I
R37	A	D	10J
R38	B	C	10M
R39	B	C	9J
R40	B	C	7M
R41	B	C	6L
R43	B	C	19P
R44	B	C	19P
R45	B	C	9L
R54	B	C	9K
R55	B	C	9K
R56	B	C	7H
R57	A	D	12J
R58	B	C	7H
R59	B	C	9N
R61	B	C	8I
R62	B	C	7I
R63	B	C	6G
R64	A	D	7J
R65	B	C	7J
R66	B	C	8K
R67	B	C	7L
R68	A	D	7N
R69	B	C	11M
R70	B	C	11M
R71	B	C	9N
R72	B	C	7J
R73	B	C	7L
R74	B	C	7K
R75	B	C	16O
R76	B	C	19N
R77	B	C	10L
R78	B	C	10L
R79	B	C	10L
R80	B	C	9L
R81	B	C	10K
R82	B	C	10L
R83	B	C	20N
R84	B	C	9I
R85	A	D	8J
R86	B	C	9K
R87	B	C	9K
R88	B	C	10L
R89	B	C	9L
R90	B	C	9L
R91	A	D	21B
R92	A	D	21C
R93	A	D	16N
R101	B	C	15N
R102	B	C	15O
R103	B	C	13N
R104	B	C	14N
R105	B	C	14O
R106	B	C	13N
R107	B	C	14N
R108	B	C	14N
R109	B	C	13N
R110	B	C	13N
R111	B	C	13N
R112	B	C	15N
R113	B	C	13P
R114	B	C	13P
R115	A	D	10I
R116	A	D	20I
R117	A	D	13M
R118	B	C	13N
R251	B	C	15L
R252	B	C	15L
R253	B	C	15L
R254	B	C	15L
R255	B	C	15L
R256	B	C	14L
R257	B	C	14L
R258	B	C	14L
R259	B	C	14M
R260	B	C	14M
R261	B	C	14M
R262	B	C	14M
R263	B	C	15M
R264	B	C	15L
R265	B	C	15L
R266	B	C	6K
R267	B	C	6K
R268	B	C	6K
R269	B	C	6J
R270	B	C	6J
R271	B	C	8J
R272	B	C	7K
R273	B	C	7K
R274	B	C	8J
R275	B	C	7J
R276	B	C	8J
R277	B	C	13L
R278	B	C	9N
R279	B	C	10N
R280	B	C	6I
R281	B	C	10J
R282	B	C	7H
R283	B	C	14L
R284	B	C	14L
R285	B	C	13M
R286	B	C	13M
R287	B	C	14M
R288	B	C	14M
R289	B	C	16M
R301	B	C	9O
R302	B	C	8O
R303	B	C	9O
R304	B	C	8O
R305	B	C	8O
R306	B	C	8O
R307	B	C	8N
R308	B	C	8O
R310	B	C	8O
R311	B	C	8O
R312	A	D	7N
R313	B	C	7N
R314	B	C	7O
R315	B	C	8P
R316	B	C	7O
R317	B	C	9P
R318	B	C	9O
R319	B	C	8P
R320	B	C	7N
R321	B	C	7O
R322	B	C	19O
R331	B	C	8P
R332	B	C	8P
R333	A	D	8P
R334	B	C	8P
R335	B	C	9P
R336	B	C	9P
R337	B	C	10P
R338	B	C	10P
R339	B	C	10P
R340	B	C	10P
R701	B	C	11G
R702	B	C	12G
R703	A	D	16H
R704	A	D	15J
R705	B	C	12G
R706	B	C	12G
R707	B	C	15H
R708	B	C	13F
R709	B	C	11F
R710	B	C	11G
R711	B	C	13F
R712	B	C	13F
R713	B	C	15G
R714	B	C	12G
R715	B	C	12F
R716	B	C	12G
R717	B	C	12F
R718	B	C	11F
R719	B	C	13F
R720	B	C	13F
R721	B	C	17G
R722	B	C	13F
R723	B	C	14F
R724	B	C	13F
R725	B	C	14F
R726	B	C	16H
R727	B	C	16H
R728	B	C	14H
R729	B	C	14I
R730	B	C	13F
R731	B	C	17H
R732	B	C	16G
R733	B	C	15G
R734	B	C	11G
R735	B	C	15G
R736	B	C	15H
R737	B	C	15H
R738	B	C	13F
R739	B	C	13N
R740	B	C	15H
R741	B	C	15H
R742	B	C	6D
R743	A	D	16H
R744	A	D	8F
R745	B	C	11G
R746	A	D	12G
R747	B	C	11G
R748	B	C	15I
R749	B	C	15I
R750	B	C	10P
R751	B	C	15H
R752	B	C	14J
R753	B	C	15I
R754	B	C	15I
R755	A	D	15I
R756	A	D	15I
R757	B	C	6P
R758	B	C	5P
R759	B	C	5P
R760	B	C	20H
R761	B	C	15I
R762	B	C	6F
R763	B	C	7F
R764	B	C	6F
R765	B	C	15K
R766	A	D	12J
R767	B	C	6F
R768	B	C	19I
R769	B	C	15G
R770	B	C	9G
R771	B	C	11H
R772	B	C	9C
R773	B	C	11F
R774	B	C	15E
R775	B	C	15E
R776	B	C	15E
R777	B	C	4E
R778	B	C	3G
R779	A	D	3G
R780	B	C	15J
R781	B	C	14I
R782	A	D	6C
R783	A	D	18B
R784	B	C	14F
R785	B	C	15F
R786	A	D	12F
R787	B	C	11G
R788	B	C	14F
R789	B	C	15J
R790	B	C	15J
R791	A	D	17G
R792	B	C	15F
R793	B	C	9G
R794	B	C	6P
R795	B	C	5P
R796	A	C	16I
R797	A	C	16I
R798	B	C	16I
R799	A	D	16I
R801	B	C	16H
R802	B	C	16H
R803	B	C	14K
R901	A	D	3M
R902	A	D	3M
R903	A	D	3M
R904	A	D	1K
R905	A	D	2L
R906	B	C	2K
R908	A	D	4K
R909	B	C	3L
R910	B	C	3L
R911	B	C	2L
R951	B	C	4H
R955	A	D	3G
R957	A	D	1F
R963	B	C	2D
R964	B	C	2D
R970	A	D	1C
R971	A	D	2F
R974	A	D	2F
R975	B	C	3E
R1003	B	C	21G
R1004	B	C	21G
R1005	B	C	22E
R1006	B	C	22E
R1007	B	C	20F
R1008	B	C	21F
R1009	B	C	21F
R1010	B	C	21F
R1012	B	C	22G
R1016	B	C	22F
R1021	B	C	21F
R1022	B	C	21F
R1023	B	C	22E
R1024	B	C	22E
R1037	B	C	22G
R1038	B	C	22H
R1047	B	C	21G
R1048	B	C	21G
R1049	B	C	21H
R1101	B	C	14I
R1102	B	C	14J
R1104	B	C	11F
R1105	B	C	13G
R1106	B	C	13G
R1107	A	D	10G
R1109	A	D	15J
R1110	B	C	12H
R1111	B	C	12H
R1112	B	C	12I
R1113	B	C	12H
R1115	B	C	12G
R1116	B	C	13I
R1117	B	C	13J
R1118	A	D	14J
R1119	B	C	13J
R1120	B	C	13J
R1121	B	C	13J
R1122	B	C	5C
R1123	B	C	5C
R1124	B	C	13J
R1125	A	D	14J
R1126	B	C	15J
R1127	B	C	12H
R1201	B	C	10B
R1203	B	C	9A
R1204	B	C	9B
R1205	B	C	9C
R1206	B	C	9C
R1207	B	C	10B
R1208	B	C	12B
R1209	B	C	9C
R1210	B	C	1E
R1211	B	C	10C
R1212	B	C	11C
R1214	B	C	10C
R1215	B	C	10C
R1216	B	C	10C
R1220	B	C	16A
R1221	B	C	13B
R1222	B	C	2A
R1223	B	C	7A
R1224	B	C	6A
R1226	A	D	7A
R1227	A	D	7B
R1301	B	C	17N
R1302	B	C	16N
R1303	B	C	16N
R1304	B	C	16N
R1305	B	C	16N
R1306	B	C	16N
R1307	B	C	17M
R1308	B	C	17M
R1309	B	C	16M
R1310	B	C	17M
R1401	B	C	20L
R1402	B	C	20L
R1403	A	D	20L
R1451	B	C	18O
R1601	B	C	21E
R1605	B	C	20E
R1606	B	C	19D
R1607	B	C	20E
R1611	B	C	20E

SWITCH

S1	A	D	22B
S2	A	D	18B
S3	A	D	16B
S4	A	D	7B
S5	A	D	6B
S6	A	D	6B
S8	A	D	5B
S9	A	D	4B
S10	A	D	4B
S11	A	D	4B
S12	A	D	3B
S13	A	D	2B
S14	A	D	2B
S15	A	D	1B
S16	A	D	17B
S701	A	D	6C
S702	A	D	17C

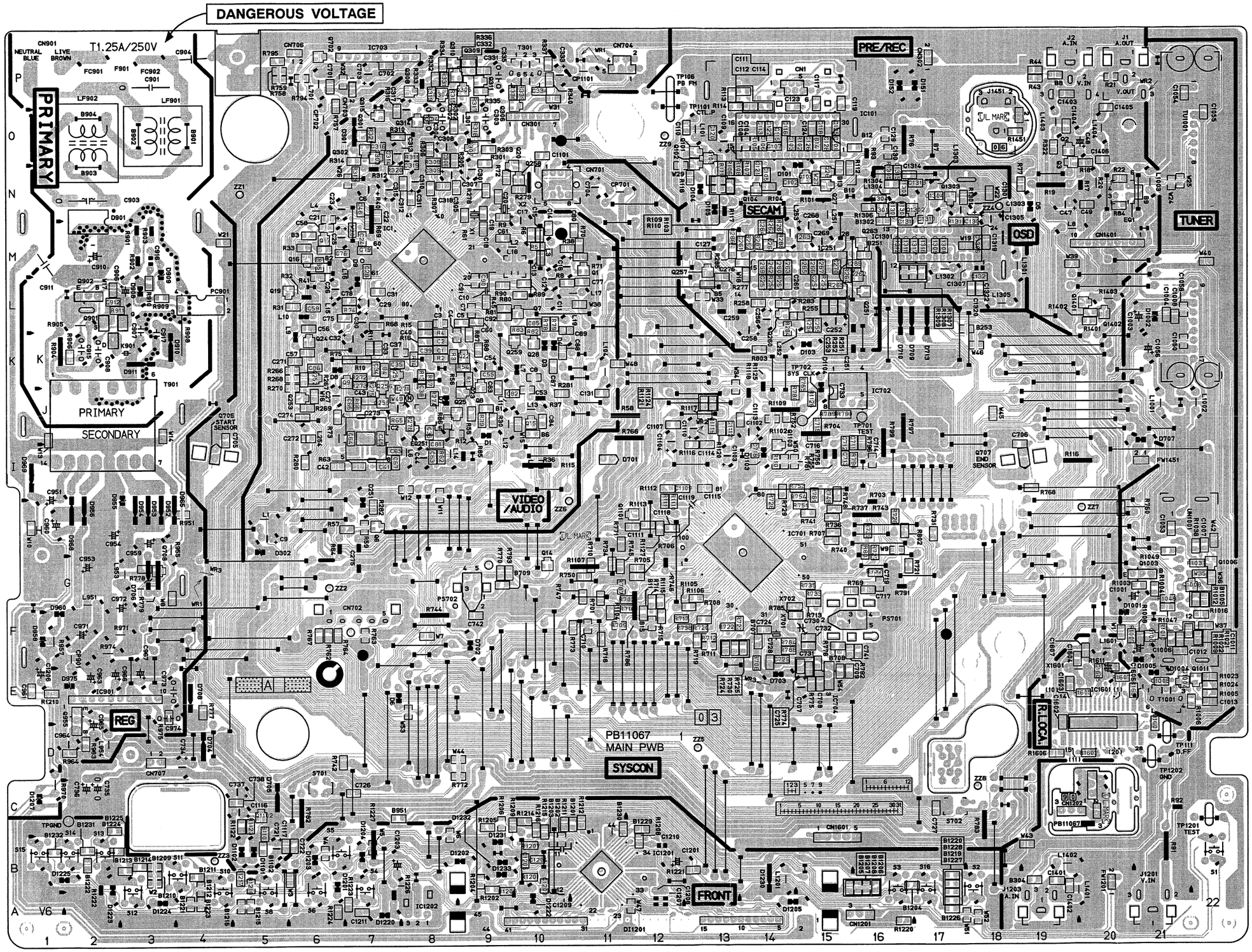
TEST POINT

TP106	A	D	13P
TP111	A	D	21D
TP701	A	D	16J
TP702	A	D	15J
TP1101	A	D	13P
TP1201	A	D	22C
TP1202	A	D	21D
TPGND	A	D	2C

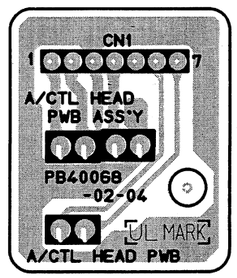
OTHERS

DI1201	A	D	12A
EQ1	A	D	20N
EQ251	A	D	8J
F901	A	D	3P
FW1201	A	D	20B
FW1202	A	D	20C
FW1451	A	D	21I
FW1452	A	D	18O
J1	A	D	20Q
J2	A	D	19Q
J1201	A	D	21A
J1203	A	D	19A
J1451	A	D	18O
K901	A	D	3K
LF901	A	D	4O
LF902	A	D	2N
PC901	A	D	4L
PC01029	A	D	20E
PS701	A	D	15F
PS702	A	D	9G
T301	A	D	10P
T901	A	D	1K
T1001	A	D	21E
TU1001	A	D	22P
UN1001	A	D	21H
WR1	A	D	11P
WR2	A	D	13J
WR3	A	D	14E
X1	A	D	9N
X2	A	D	10N
X701	A	D	14F
X702	A	D	15G
X1601	A	D	20E

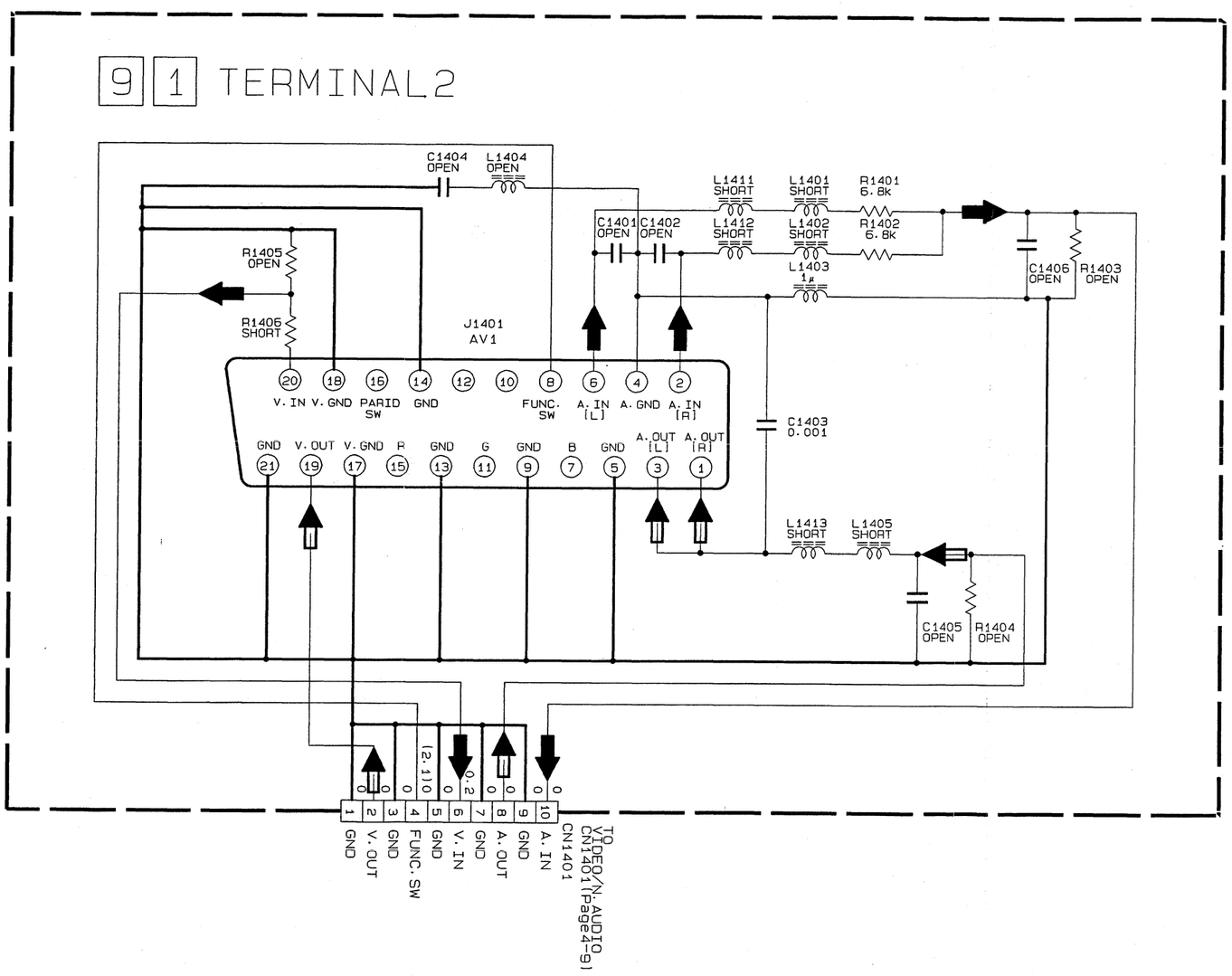
4.10 MAIN AND A/C HEAD CIRCUIT BOARDS

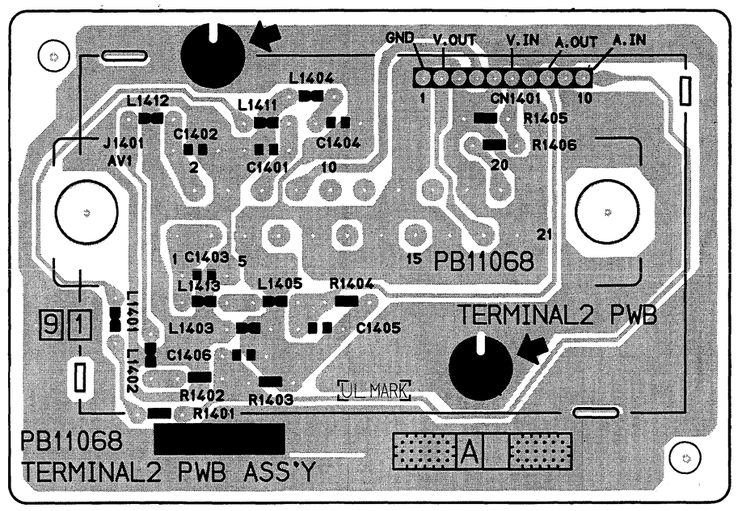


— A/C HEAD —



4.11 TERMINAL 2 SCHEMATIC DIAGRAM AND CIRCUIT BOARD





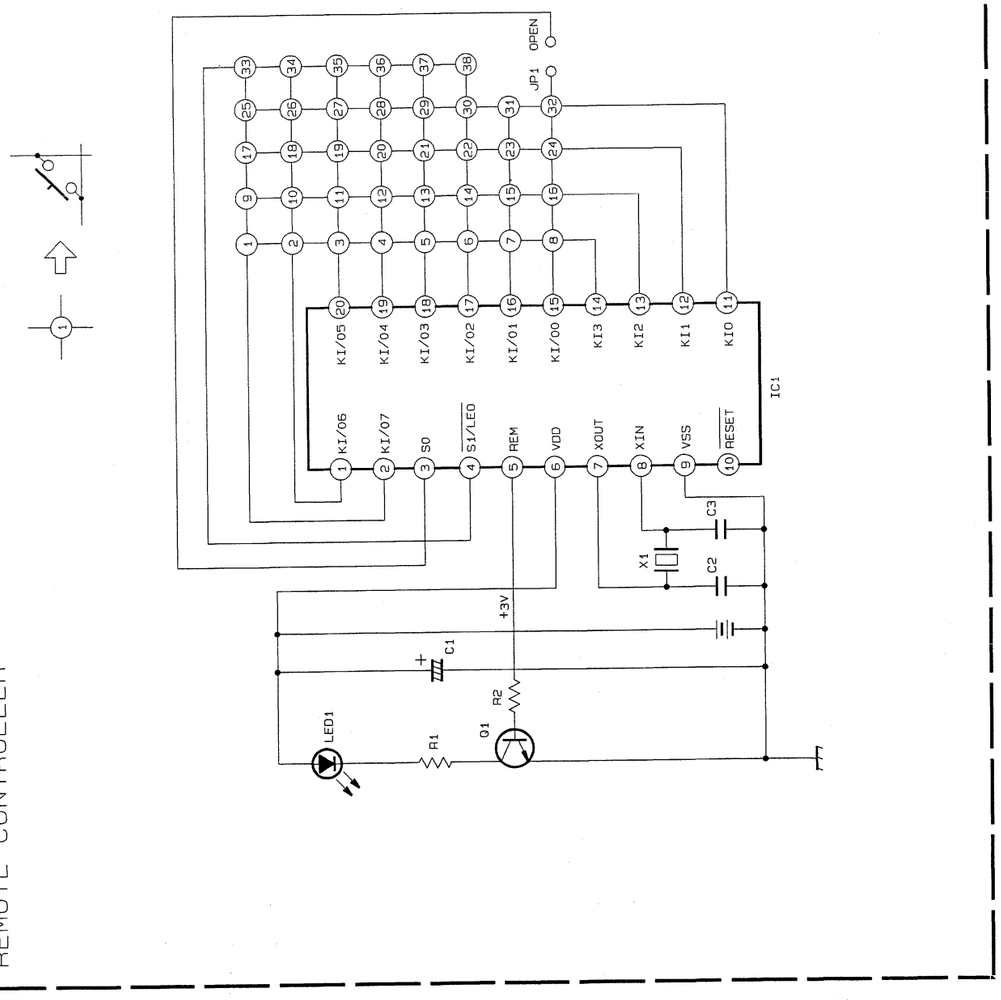
4.12 REMOCON SCHEMATIC DIAGRAMS

[VR297/55 & VR397/55]

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

Key No.	Key Name
1	TV VOLUME +
2	TV VOLUME -
3	1
4	4
5	7
6	100 -/--
7	EXIT/STATUS
8	MENU
9	TV CHANNEL +
10	TV CHANNEL -
11	2
12	5
13	8
14	0
15	INDEX ⏮
16	REW
17	MUTE
18	X2 PLAY
19	3
20	6
21	9
22	GO-TO
23	INDEX ⏭
24	PLAY
25	EJECT
26	MEMORY
27	VCR CHANNEL +
28	VCR CHANNEL -
29	TRACKING +
30	TRACKING -
31	SLOW
32	FF
33	CLEAR
34	REC/OTR
35	STOP
36	PAUSE/STILL
37	VCR POWER
38	TV POWER

BZ013979-01

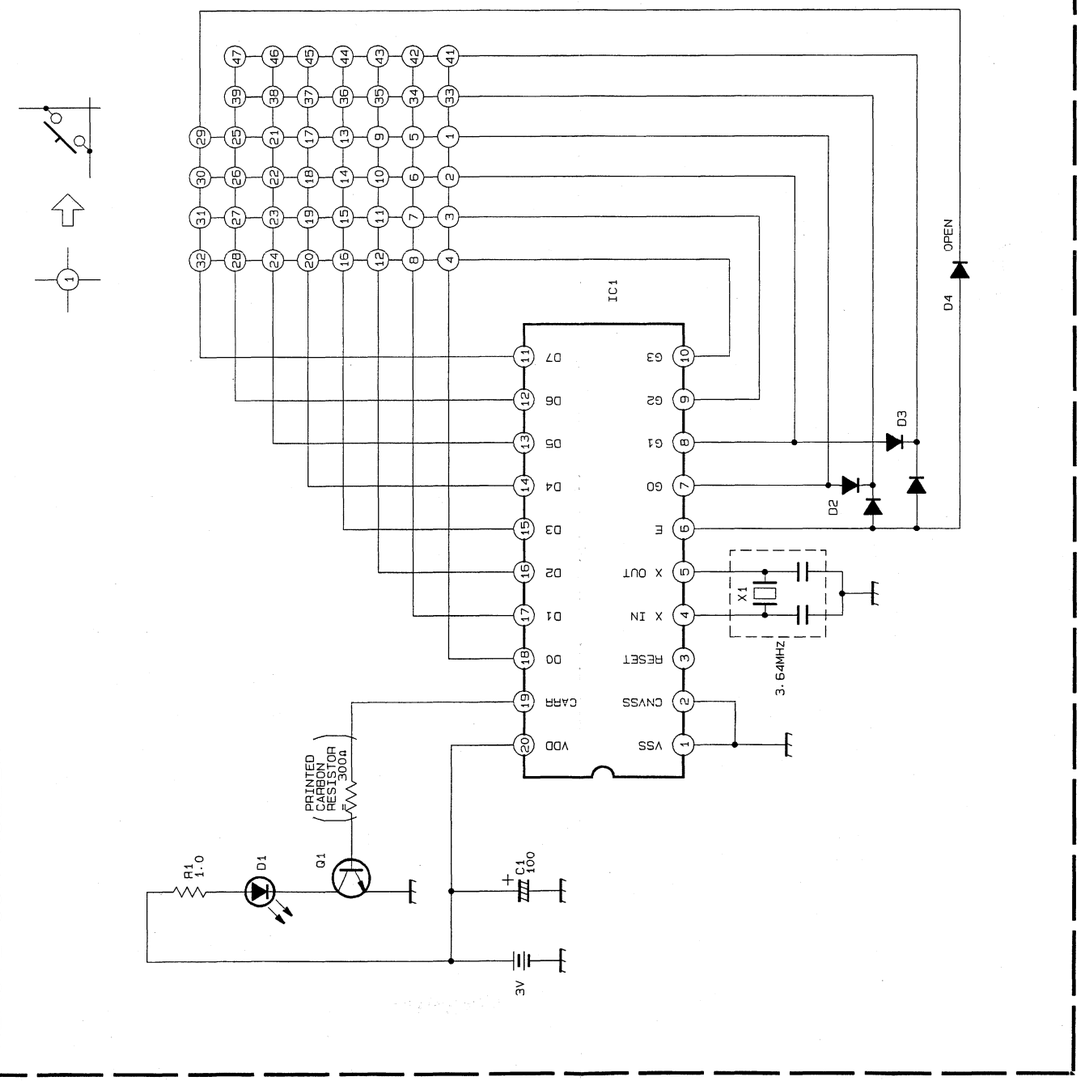


[VR497/55 & VR597/55]

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
   Avoid replacing individual parts.
   Replace the entire unit only.

Key No.	Key Name
1	7
2	MUTE
3	8
4	9
5	4
6	VCR POWER
7	5
8	6
9	1
10	F.ADV
11	2
12	3
13	STATUS/EXIT
14	MEMORY
15	MENU
16	CLEAR
17	X2PLAY
18	A.CH
19	STOP
20	SKIP/AUDIO
21	REW
22	TVPOWER
23	PLAY
24	FF
25	TV CH-
26	TV CH+
27	PAUSE/STILL
28	VCR CH-
29	100 -/--
30	EJECT
31	0
32	GO-TO
33	REC/OTR
34	VAR.SLOW-
35	TV VOL+
36	TRACKING+
37	-
38	VCR CH+
39	VAR.SLOW+
41	SPEED
42	VCR/TV
43	TV VOL-
44	TRACKING-
45	-
46	-
47	SLOW

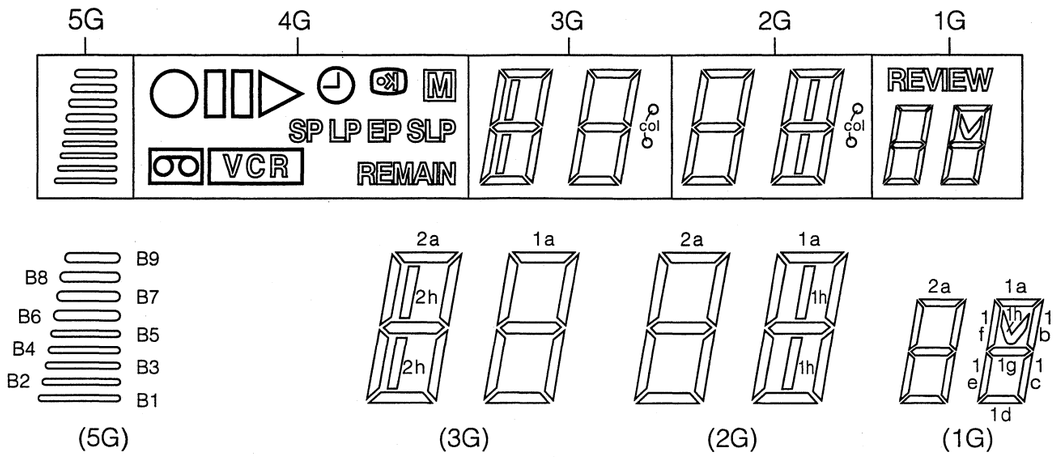
BZ013782-01



4.13 FDP GRID ASSIGNMENT AND ANODE CONNECTION

— NOTE —

GRID ASSIGNMENT

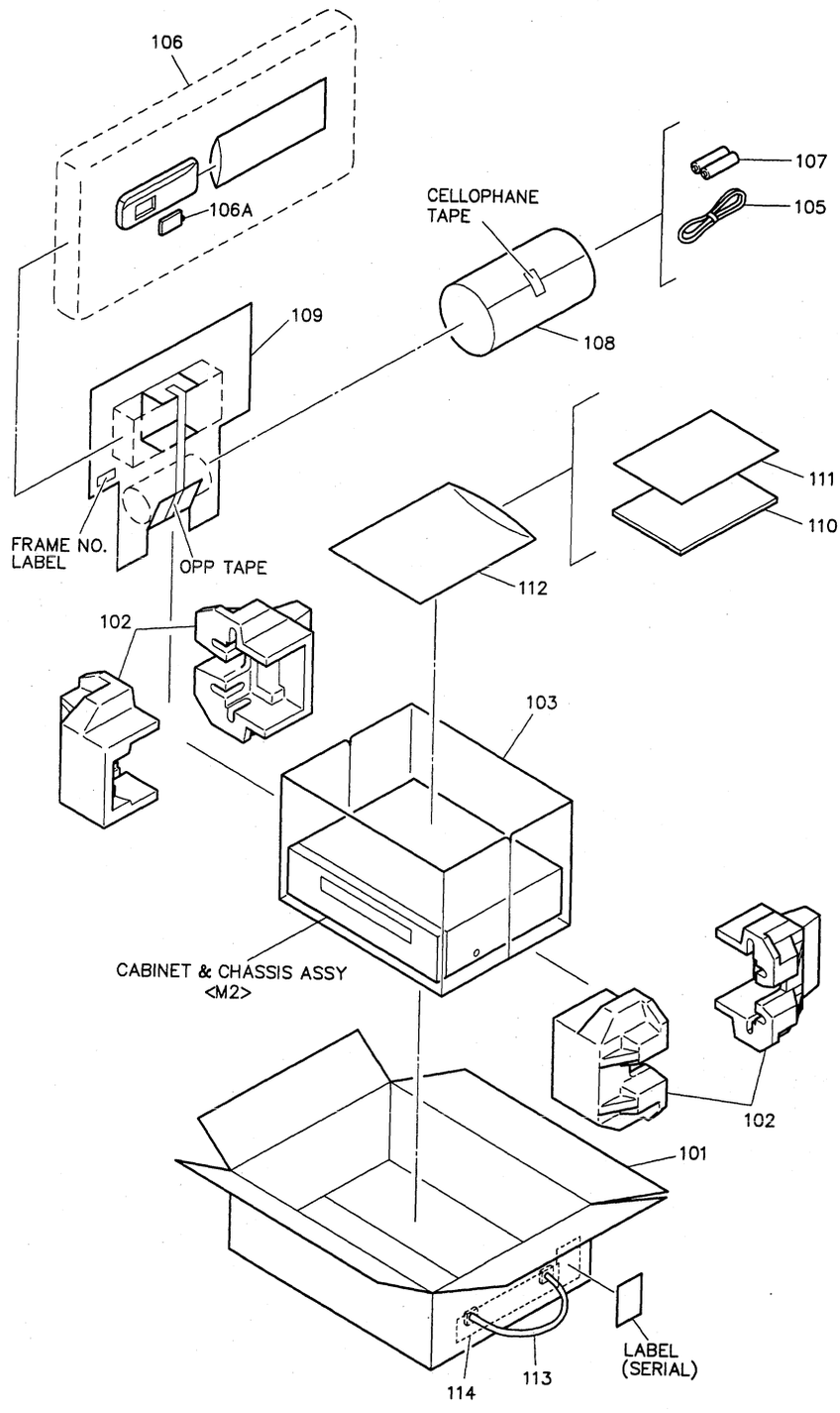


ANODE CONNECTION

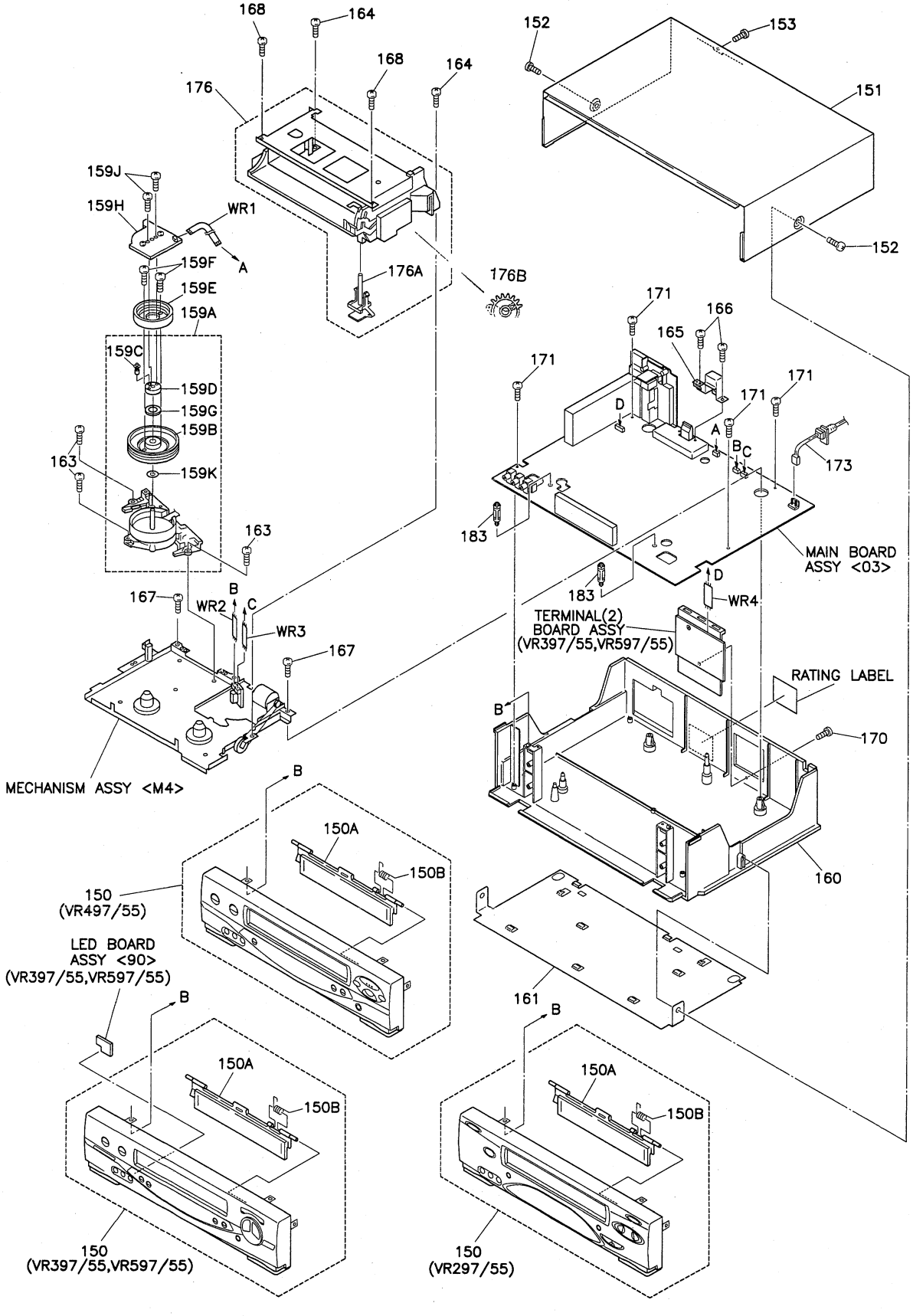
	5G	4G	3G	2G	1G
P1	—	○	1a	1a	1a
P2	—	▯▯	1b	1b	1b
P3	—	▷	1f	1f	1f
P4	—	🕘	1g	1g	1g
P5	—	⏭	1c	1c	1c
P6	—	M	1e	1e	1e
P7	—	📼	1d	1d	1d
P8	B9	VCR	col	1h	1h
P9	B8	SP	2a	2a	2a
P10	B7	LP	2b	2b	2b
P11	B6	EP	2f	2f	2f
P12	B5	SLP	2g	2g	2g
P13	B4	REMAIN	2c	2c	2c
P14	B3	—	2e	2e	2e
P15	B2	—	2d	2d	2d
P16	B1	—	2h	col	REVIEW

SECTION 5
PARTS LIST

5.1 PACKING AND ACCESSORY ASSEMBLY



5.2 CABINET AND CHASSIS ASSEMBLY



1. PACKING AND ACCESSORY ASSEMBLY <M1>

106	4822 219 10321	REMOTE CONT,VR497/55 VR597/55
	4822 219 10334	REMOTE CONT,VR297/55 VR397/55
106A	4822 462 10958	BATTERY CAP,VR297/55 VR397/55
110 !	4822 736 15578	INSTRUCTIONS,VR297/55 VR497/55
!	4822 736 15579	INSTRUCTIONS,VR397/55 VR597/55

2. CABINET AND CHASSIS ASSEMBLY <M2>

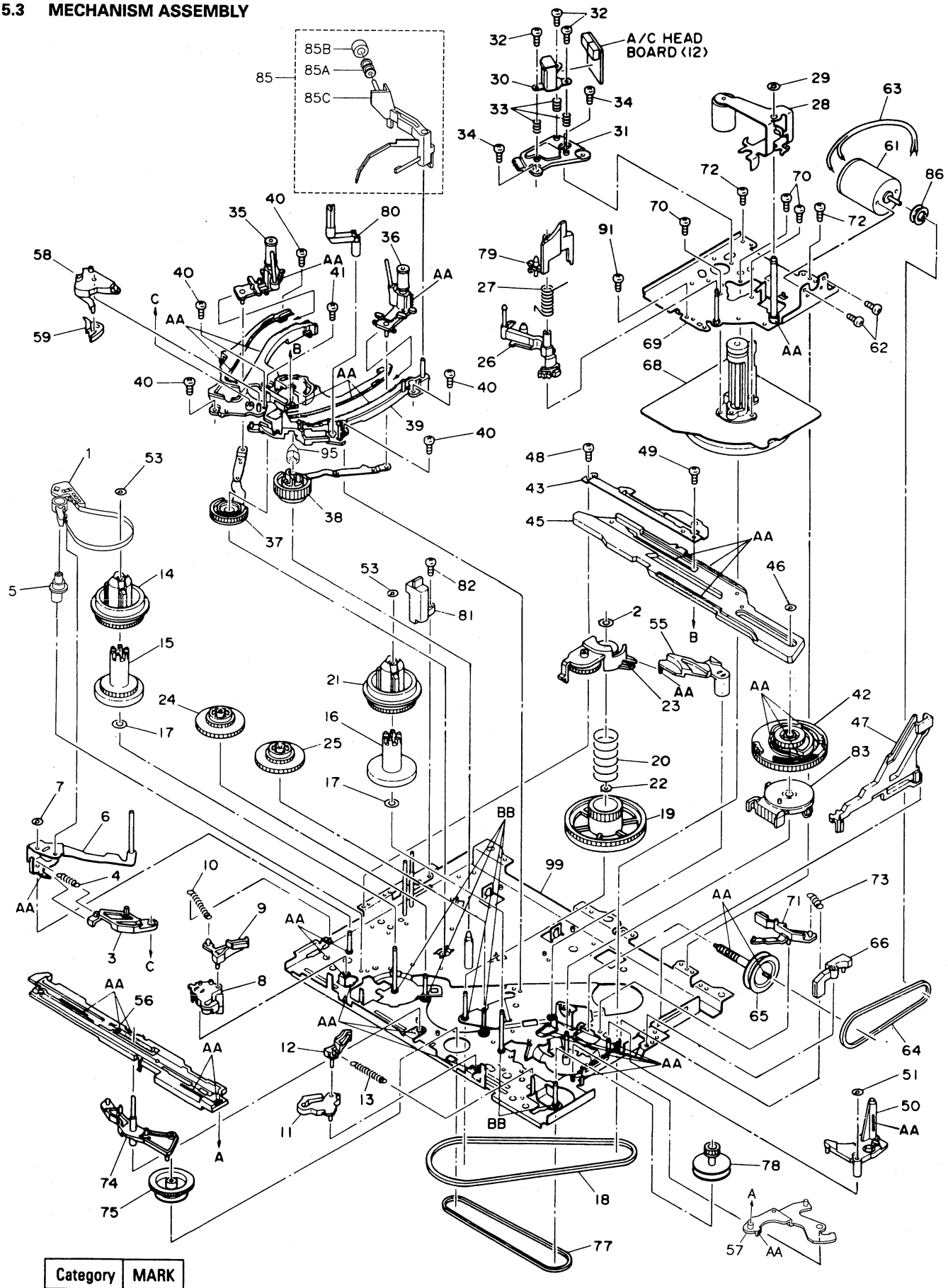
150	4822 459 04685	FRONT PANEL ASSY,VR497/55
	4822 459 04686	FRONT PANEL ASSY,VR297/55
	4822 459 04687	FRONT PANEL ASSY,VR397/55
	4822 459 04688	FRONT PANEL ASSY,VR597/55
150A	4822 443 10734	CASSETTE DOOR,VR297/55
	4822 443 10665	CASSETTE DOOR,VR397, VR497/55
150B	4822 492 42781	TORSION SPRING
151 !	4822 442 00935	TOP COVER,VR397/55 VR597/55
!	4822 442 00676	TOP COVER,VR297/55
!	4822 443 10735	TOP COVER,VR497/55
159A	4822 691 10618	DRUM SUB ASSY,VR297, VR397/55
	4822 691 10619	DRUM SUB ASSY,VR497, VR597/55
159B	4822 691 10621	UPPER DRUM ASSY,VR297/55 VR397
	4822 691 10622	UPPER DRUM ASSY,VR497/55 VR597
159C	4822 479 20199	BRUSH ASSEMBLY
159D	4822 532 12803	COLLAR ASSEMBLY
159E	4822 362 10288	ROTOR ASSEMBLY
159G	4822 462 10924	CAP
159H	4822 362 10291	STATOR ASSEMBLY
159K	4822 532 12804	WASHER
160 !	4822 464 10335	BOTTOM CHASSIS,VR397/55 VR597
!	4822 464 10331	BOTTOM CHASSIS,VR297/55 VR497
161 !	4822 442 00938	BOTTOM COVER,VR397/55 VR597/55
!	4822 442 00406	BOTTOM COVER,VR297/55 VR497/55
163	4822 502 13818	SCREW,X3 DRUM
165	4822 442 01044	SHIELD COVER,PRE
173 !	4822 321 11142	POWER CORD
176	4822 441 11997	CASSETTE HOUSING ASSEMBLY
176A	4822 535 10316	CASSETTE SWITCH PIN
176B	4822 522 10556	DRIVE GEAR
183	4822 535 71384	SPACER,X2

WIRE

WR1	4822 320 12039	FFC WIRE,DRUM
WR2	4822 320 12041	WIRE,CTL HEAD VR397/55 VR597/5
WR3	4822 321 62095	WIRE,AUDIO HEAD VR397/55 VR597
WR4	4822 320 12042	WIRE,TERMINAL VR397/55 VR597/5

! ... Safety component, use only this type.

5.3 MECHANISM ASSEMBLY



Category	MARK
Grease	AA
Oil	BB

NOTE: The section marked in **AA** and **BB** indicate lubrication and greasing areas.

3. MECHANISM ASSEMBLY <M4>

1	4822 466 11535	TENSION BAND ASSEMBLY
2	4822 532 11553	SLIT WASHER
3	4822 402 10367	TENSION ARM LEVER
4	4822 492 11184	TENSION SPRING
5	4822 535 10471	ADJUST PIN
6	4822 403 71294	TENSION ARM ASSEMBLY
7	4822 532 12326	SLIT WASHER
8	4822 403 10318	MAIN BRAKE ASSEMBLY (SUPPLY)
9	4822 403 71295	SUB BRAKE ASSEMBLY (SUPPLY)
10	4822 492 33502	TENSION SPRING
11	4822 402 10567	MAIN BRAKE ASSEMBLY (TAKE UP)
12	4822 403 71313	SUB BRAKE ASSEMBLY (TAKE UP)
13	4822 492 33501	TENSION SPRING
14	4822 528 11122	REEL DISK ASSEMBLY (SUPPLY)
15	4822 528 11122	SLIT DISK (SUPPLY)
16	4822 528 11125	SLIT DISK (TAKE UP)
17	4822 532 12805	SPACER,X2
18	4822 358 10182	BELT (CAPSTAN)
19	4822 528 11016	PULLEY
20	4822 492 52429	COMPRESSION SPRING
21	4822 528 11125	REEL ASSEMBLY (TAKE UP)
22	4822 535 71381	SPACER
23	4822 402 10734	IDLER ARM ASSEMBLY
24	4822 528 11126	CLUTCH UNIT (SUPPLY)
25	4822 528 30428	CLUTCH UNIT (TAKE UP)
26	4822 463 11104	GUIDE ARM ASSEMBLY
27	4822 492 11185	TORSION SPRING
28	4822 528 11051	PINCH ROLLER ARM ASSEMBLY
29	4822 532 11784	SLIT WASHER,P LEVER
30	4822 249 10444	AUDIO CONTROL HEAD
31	4822 464 10168	HEAD BASE
33	4822 492 52267	COMPRESSION SPRING,X3
35	4822 402 10374	POLE BASE ASSEMBLY (SUPPLY)
36	4822 403 71344	POLE BASE ASSEMBLY (TAKE UP)
37	4822 402 10376	LOADING ARM ASSEMBLY (SUPPLY)
38	4822 402 10625	LOADING ARM ASSEMBLY (TAKE UP)
39	4822 463 11065	GUIDE RAIL
42	4822 528 11127	CONTROL CAM
43	4822 404 31498	CONTROL BRACKET
45	4822 466 11536	CONTROL PLATE
46	4822 532 12105	SLIT WASHER
47	4822 466 11143	PINCH PLATE
50	4822 402 10378	LEVER ASSEMBLY
51	4822 532 12105	SLIT WASHER
53	4822 532 12326	SLIT WASHER,X2
55	4822 402 10381	IDLER LEVER
56	4822 466 11332	SLIDE PLATE
57	4822 402 10735	CHANGE LEVER ASSEMBLY
58	4822 402 10382	TAKE UP LEVER
59	4822 402 10383	TAKE UP HEAD
61	4822 361 21766	LOADING MOTOR
63	4822 321 63037	WIRE
64	4822 358 10204	BELT
65	4822 522 10482	WORM GEAR ASSEMBLY
66	4822 520 10826	WORM BEARING
68	4822 361 10918	CAPSTAN MOTOR
69	4822 464 10311	SUB DECK ASSEMBLY
71	4822 466 11146	CAPSTAN BRAKE ASSEMBLY
73	4822 492 33496	TENSION SPRING,CAPSTAN BRAKE
74	4822 402 10384	CHANGE ARM ASSEMBLY
75	4822 522 10479	CHANGE GEAR
77	4822 358 10184	BELT
78	4822 522 10616	CASSETTE GEAR
79	4822 463 11066	LID GUIDE
80	4822 381 11878	LED PRISM
81	4822 249 40307	FULL ERASE HEAD
83	4822 691 21046	ROTARY ENCODER
85	4822 403 71306	CLEANER ASSEMBLY
85A	4822 528 90894	CLEANER ROLLER
85B	4822 403 71306	CLEANER
85C	4822 403 71293	CLEANER ARM
86	4822 528 81557	MOTOR PULLEY
95	4822 462 10925	GUIDE CAP

! ... Safety component, use only this type

4. MAIN BOARD ASSEMBLY <03>

PCB

PW1	4822 214 12387	MAIN BOARD ASSY,VR497/55
	4822 214 12388	MAIN BOARD ASSY,VR397/55
	4822 214 12389	MAIN BOARD ASSY,VR297/55
	4822 214 12391	MAIN BOARD ASSY,VR597/55
	(AVAILABLE DURING PRODUCTION ONLY)	

INTEGRATED CIRCUITS

IC1	4822 209 13619	HA118203AF
IC2	4822 209 13621	MSM7470-70MS-XE
IC101	4822 209 15607	LA7416
IC701	4822 209 15754	M37777MAA1A0GP
IC702	4822 209 62098	X24C02P
IC703	4822 209 30619	TA7291S
IC704	4822 209 32537	S-80728AN-Z
IC901	4822 209 15611	LA5613
IC1201	!4822 209 90492	UPD16312GB(P)
IC1202	4822 130 10959	GP1U290Q
IC1301	4822 209 15755	LC74784-9665
	4822 209 15756	IC (OSD),VR397/55 VR597/55

TRANSISTORS

Q1	4822 130 63593	2SD1819A(QRS)
Q2	4822 130 61075	2SB1218A(QR)
Q3	4822 130 61075	2SB1218A(QR)
Q7	4822 130 63593	2SD1819A(QRS)
Q8	4822 130 63593	2SD1819A(QRS)
Q14	4822 130 61286	UN521E
Q15	4822 130 61075	2SB1218A(QR)
Q19	4822 130 63593	2SD1819A(QRS)
Q24	4822 130 61286	UN521E
Q26	4822 130 10897	UN511E
Q27	4822 130 10897	UN511E
Q28	4822 130 61286	UN521E
Q102	4822 130 61286	UN521E
Q301	4822 130 61287	UN5211
Q302	4822 130 10897	UN511E
Q303	4822 130 61061	UN5215
Q304	4822 130 10897	UN511E
Q305	4822 130 62555	UN5111
Q306	4822 130 63593	2SD1819A(QRS)
Q307	4822 130 63593	2SD1819A(QRS)
Q308	4822 130 61287	UN5211
Q309	4822 130 61075	2SB1218A(QR)
Q310	4822 130 61075	2SB1218A(QR)
Q311	4822 130 63593	2SD1819A(QRS)
Q314	4822 130 61286	UN521E
Q315	4822 130 61287	UN5211
Q702	4822 130 60669	2SC4081(QRS)
Q706	4822 130 10898	LP40038-001A
Q707	4822 130 10898	LP40038-001A
Q708	4822 130 60669	2SC4081(QRS)
Q901	4822 130 10437	2SK2632-CB14
Q902	4822 130 61892	2SD2144S(UV)
Q955	4822 130 61892	2SD2144S(UVW)
Q1003	4822 130 62793	2SC3068
Q1004	4822 130 61075	2SB1218A(QR)
Q1005	4822 130 63593	2SD1819A(QRS)
Q1008	4822 130 61075	2SB1218A(QRS)
Q1011	4822 130 63593	2SD1819A(QRS)
Q1102	4822 130 63593	2SD1819A(QRS)
Q1401	4822 130 61075	2SB1218A(QR)
Q1402	4822 130 61286	UN521E

DIODES

D1	4822 130 30621	1N4148M
D4	4822 130 30621	1N4148M
D5	4822 130 30621	1N4148M
D6	4822 130 30621	1N4148M
D8	4822 130 30621	1N4148M
D9	4822 130 30621	1N4148M
D101	4822 157 71864	QWY124
D104	4822 130 30621	1N4148M
D151	4822 130 30621	1N4148M
D152	4822 130 30621	1N4148M
D301	4822 130 30621	1N4148M
D701	4822 130 83429	SIR-381SB3FM
D702	4822 130 30621	1N4148M
D704	4822 130 81748	11ES2
D705	4822 130 81748	11ES2
D706	4822 130 83944	RD39ES-T1B3
D709	4822 130 30621	1N4148M
D710	4822 130 30621	1N4148M
D713	4822 130 30621	1N4148M
D901	4822 130 83946	S1WB(A)60F4062X
D908	4822 130 30621	1N4148M
D909	4822 130 82691	UZ27BSB
D910	4822 130 82686	AU01
D911	4822 130 82686	AU01
D952	4822 130 82768	AU01Z
D953	4822 130 82768	AU01Z
D954	4822 130 82768	AU01Z
D955	4822 130 83751	UZ15BSA
D956	4822 130 81377	AK04
D958	4822 130 10899	UZ30BSA
D960	4822 130 30621	1N4148M
D965	4822 130 82768	AU01Z
D968	4822 130 82768	AU01Z
D969	4822 130 82768	1SR153-200-T2
D975	4822 130 10901	UZ6.8BSA
D1001	4822 130 80998	MTZJ10B
D1002	4822 130 81729	MTZJ33(C)
D1004	4822 130 30621	1N4148M
D1005	4822 130 30621	1N4148M
D1103	4822 130 30621	1N4148M
D1104	4822 130 30621	1N4148M
D1201	4822 130 30621	1N4148M
D1202	4822 130 30621	1N4148M
D1203	4822 130 30621	1N4148M
D1204	4822 130 30621	1N4148M
D1205	4822 130 30621	1N4148M
D1207	4822 130 80793	RD9.1ES-T1B2
D1225	4822 130 30621	1N4148M
D1230	4822 130 81748	11ES2

RESISTORS

R1	4822 051 20753	RESISTOR 3.3kΩ,1/10W
R2	4822 116 81732	RESISTOR 1.2kΩ,1/10W
R3	4822 051 20753	RESISTOR 3.3kΩ,1/10W
R4	4822 116 81657	RESISTOR 1.8kΩ,1/10W
R5	4822 116 81549	RESISTOR 820Ω,1/10W
R6	4822 116 81659	RESISTOR 2.2kΩ,1/10W
R8	4822 116 81732	RESISTOR 1.2kΩ,1/10W
R9	4822 116 81666	RESISTOR 27kΩ,1/10W
R10	4822 116 81657	RESISTOR 1.8kΩ,1/10W
R11	4822 116 81671	RESISTOR 3.9kΩ,1/10W
R12	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R13	4822 116 81653	RESISTOR 1.5kΩ,1/10W
R14	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R15	4822 116 81671	RESISTOR 3.9kΩ,1/10W
R16	4822 116 81665	RESISTOR 2.7kΩ,1/10W
R17	4822 116 81538	RESISTOR 15kΩ,1/6W
R18	4822 116 81646	RESISTOR 10kΩ,1/10W
R19	4822 116 81536	RESISTOR 1kΩ,1/6W
R20	4822 111 41576	RESISTOR 330Ω,1/2W
R21	4822 117 11444	RESISTOR 75Ω,1/10W
R22	4822 116 81645	RESISTOR 1kΩ,1/10W
R30	4822 116 81645	RESISTOR 1kΩ,1/10W
R31	4822 116 81676	RESISTOR 560Ω,1/10W
R32	4822 116 81536	RESISTOR 1kΩ,1/6W

! ... Safety component, use only this type

R36	4822 116 81645	RESISTOR 1kΩ,1/10W
R37	4822 050 15603	RESISTOR 56kΩ,1/6W
R39	4822 116 81654	RESISTOR 15kΩ,1/10W
R40	4822 116 81661	RESISTOR 22kΩ,1/10W
R41	4822 116 81734	RESISTOR 18kΩ,1/10W
R43	4822 116 81545	RESISTOR, 0R, VR397/55 VR497/55
	4822 116 82932	RESISTOR,VR297/55 20Ω,1/10W
R44	4822 116 82162	RESISTOR,VR297/55 56Ω,1/10W
R45	4822 117 12335	RESISTOR 3.3MΩ,1/10W
R61	4822 116 81545	RESISTOR 0Ω,1/10W
R62	4822 116 81545	RESISTOR 0Ω,1/10W
R63	4822 116 81545	RESISTOR 0Ω,1/10W
R65	4822 116 81545	RESISTOR 0Ω,1/10W
R66	4822 116 81545	RESISTOR 0Ω,1/10W
R70	4822 116 81646	RESISTOR 10kΩ,1/10W
R71	4822 116 81646	RESISTOR 10kΩ,1/10W
R73	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R74	4822 051 20753	RESISTOR 3.3kΩ,1/10W
R75	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R76	4822 116 81729	RESISTOR 470Ω,1/6W
R77	4822 116 81646	RESISTOR 10kΩ,1/10W
R79	4822 116 81742	RESISTOR, 8.2K, VR497/55 VR597/55
R80	4822 116 81653	RESISTOR 1.5kΩ,1/10W
R82	4822 116 81742	RESISTOR 8.2kΩ,1/10W
R83	4822 116 81679	RESISTOR 680Ω,1/10W
R84	4822 116 81646	RESISTOR 10kΩ,1/10W
R87	4822 116 81676	RESISTOR 560Ω,1/10W
R88	4822 116 81545	RESISTOR, 0R, VR297/55 VR397/55
	4822 116 81659	RESISTOR, 2.2K,VR497/55 VR597/55
R89	4822 116 81545	RESISTOR 0Ω,1/10W
R90	4822 116 81545	RESISTOR 0Ω,1/10W
R91	4822 117 12558	RESISTOR, 20R, VR397/55 VR497/55
R92	4822 050 15609	RESISTOR, 56R, VR397/55 VR497/55
R93	4822 116 81636	RESISTOR 10kΩ,1/6W
R101	4822 050 12703	RESISTOR 27kΩ,1/6W
R102	4822 116 81654	RESISTOR 15kΩ,1/10W
R103	4822 116 81671	RESISTOR 3.9kΩ,1/10W
R105	4822 116 81646	RESISTOR 10kΩ,1/10W
R106	4822 116 81654	RESISTOR 15kΩ,1/10W
R107	4822 116 81718	RESISTOR 1.5kΩ,1/16W
R110	4822 116 81654	RESISTOR 15kΩ,1/10W
R112	4822 116 81741	RESISTOR 68kΩ,1/10W
R115	4822 111 30937	RESISTOR 0Ω,1/6W
R116	4822 116 81636	RESISTOR 10kΩ,1/6W
R117	4822 050 11803	RESISTOR 18kΩ,1/6W
R301	4822 116 81661	RESISTOR 22kΩ,1/10W
R302	4822 116 81644	RESISTOR 100Ω,1/10W
R303	4822 116 81644	RESISTOR, 100R,VR497/55 VR597/55
R304	4822 116 81644	RESISTOR 100Ω,1/10W
R305	4822 116 81661	RESISTOR 22kΩ,1/10W
R306	4822 116 81649	RESISTOR 120Ω,1/10W
R307	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R308	4822 116 81662	RESISTOR 220kΩ,1/10W
R310	4822 116 81672	RESISTOR 39kΩ,1/10W
R311	4822 116 81734	RESISTOR 18kΩ,1/10W
R312	4822 050 12201	RESISTOR 220Ω,1/6W
R313	4822 116 81646	RESISTOR 10kΩ,1/10W
R314	4822 116 81646	RESISTOR 10kΩ,1/10W
R315	4822 116 81646	RESISTOR 10kΩ,1/10W
R316	4822 116 81654	RESISTOR 15kΩ,1/10W
R317	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R318	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R319	4822 116 81646	RESISTOR 10kΩ,1/10W
R320	4822 116 81662	RESISTOR 220kΩ,1/10W
R321	4822 116 81646	RESISTOR 10kΩ,1/10W
R322	4822 116 81644	RESISTOR, R100,VR297/55 VR497/55
R331	4822 116 81734	RESISTOR 18kΩ,1/10W
R332	4822 116 81675	RESISTOR 47kΩ,1/10W
R333	4822 050 11803	RESISTOR 18kΩ,1/6W
R334	4822 116 81675	RESISTOR 47kΩ,1/10W
R335	4822 117 12337	RESISTOR 3.3Ω,1/10W
R336	4822 116 81651	RESISTOR 12kΩ,1/10W
R337	4822 117 12336	RESISTOR 82Ω,1/10W
R338	4822 116 81646	RESISTOR 10kΩ,1/10W
R701	4822 116 81645	RESISTOR 1kΩ,1/10W
R702	4822 116 81645	RESISTOR 1kΩ,1/10W
R703	4822 116 81536	RESISTOR 1kΩ,1/6W
R704	4822 116 81536	RESISTOR 1kΩ,1/6W
R705	4822 116 81647	RESISTOR 100kΩ,1/10W
R706	4822 116 81647	RESISTOR 100kΩ,1/10W
R708	4822 116 81645	RESISTOR, 1K, VR497/55 VR597/55
R709	4822 116 81645	RESISTOR 1kΩ,1/10W
R710	4822 116 81645	RESISTOR 1kΩ,1/10W
R711	4822 116 81645	RESISTOR 1kΩ,1/10W
R712	4822 116 81645	RESISTOR 1kΩ,1/10W
R713	4822 116 81645	RESISTOR 1kΩ,1/10W
R714	4822 116 81545	RESISTOR 0Ω,1/10W
R715	4822 116 81645	RESISTOR 1kΩ,1/10W
R722	4822 116 81645	RESISTOR 1kΩ,1/10W
R723	4822 116 81645	RESISTOR 1kΩ,1/10W
R724	4822 116 81645	RESISTOR 1kΩ,1/10W
R725	4822 116 81645	RESISTOR 1kΩ,1/10W
R728	4822 116 81645	RESISTOR 1kΩ,1/10W
R729	4822 116 81645	RESISTOR 1kΩ,1/10W
R730	4822 116 81645	RESISTOR 1kΩ,1/10W
R732	4822 116 81645	RESISTOR 1kΩ,1/10W
R733	4822 116 81645	RESISTOR 1kΩ,1/10W
R734	4822 116 81645	RESISTOR 1kΩ,1/10W
R735	4822 116 81645	RESISTOR 1kΩ,1/10W
R736	4822 051 20753	RESISTOR 3.3kΩ,1/10W
R737	4822 051 20753	RESISTOR 3.3kΩ,1/10W
R741	4822 116 81738	RESISTOR 470Ω,1/10W
R742	4822 116 81677	RESISTOR 5.6kΩ,1/10W
R743	4822 116 81536	RESISTOR 1kΩ,1/6W
R744	4822 116 81536	RESISTOR 1kΩ,1/6W
R745	4822 116 81645	RESISTOR 1kΩ,1/10W
R746	4822 050 11004	RESISTOR 100kΩ,1/6W
R747	4822 116 81645	RESISTOR 1kΩ,1/10W
R750	4822 116 81645	RESISTOR 1kΩ,1/10W
R751	4822 116 81645	RESISTOR 1kΩ,1/10W
R752	4822 116 81645	RESISTOR 1kΩ,1/10W
R753	4822 116 81645	RESISTOR 1kΩ,1/10W
R754	4822 116 81738	RESISTOR 470Ω,1/10W
R755	4822 116 81729	RESISTOR 470Ω,1/6W
R756	4822 116 81729	RESISTOR 470Ω,1/6W
R757	4822 116 81646	RESISTOR 10kΩ,1/10W
R758	4822 116 81646	RESISTOR 10kΩ,1/10W
R759	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R762	4822 116 81646	RESISTOR 10kΩ,1/10W
R763	4822 116 81646	RESISTOR 10kΩ,1/10W
R764	4822 116 81646	RESISTOR 10kΩ,1/10W
R765	4822 116 81645	RESISTOR 1kΩ,1/10W
R766	4822 050 17509	RESISTOR 75Ω,1/6W
R767	4822 116 81742	RESISTOR 8.2kΩ,1/10W
R768	4822 116 81742	RESISTOR 8.2kΩ,1/10W
R769	4822 116 81656	RESISTOR 180Ω,1/10W
R770	4822 116 81656	RESISTOR 180Ω,1/10W
R771	4822 116 81647	RESISTOR 100kΩ,1/10W
R772	4822 116 81739	RESISTOR 470kΩ,1/10W
R773	4822 117 11717	RESISTOR 330kΩ,1/10W
R774	4822 116 81646	RESISTOR 10kΩ,1/10W
R776	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R777	4822 116 81647	RESISTOR 100kΩ,1/10W
R778	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R779	4822 116 81641	RESISTOR 4.7kΩ,1/6W
R782	4822 116 81636	RESISTOR 10kΩ,1/6W
R783	4822 116 81636	RESISTOR 10kΩ,1/6W
R784	4822 116 81648	RESISTOR 1MΩ,1/10W
R785	4822 116 81548	RESISTOR 4.7MΩ,1/10W
R787	4822 116 81647	RESISTOR 100kΩ,1/10W
R788	4822 116 81644	RESISTOR 100Ω,1/10W
R789	4822 116 81646	RESISTOR 10kΩ,1/10W
R790	4822 116 81646	RESISTOR 10kΩ,1/10W
R792	4822 116 81666	RESISTOR 27kΩ,1/10W
R793	4822 116 81666	RESISTOR 27kΩ,1/10W
R794	4822 116 81671	RESISTOR 3.9kΩ,1/10W
R796	4822 116 81647	RESISTOR 100kΩ,1/10W
R798	4822 116 81647	RESISTOR 100kΩ,1/10W
R901	4822 111 50565	RESISTOR 220kΩ,1/6W
R902	4822 111 50565	RESISTOR 220kΩ,1/6W
R903	4822 111 30976	RESISTOR 68kΩ,1/6W
R904	4822 117 12785	RESISTOR 330Ω,1/2W
R905	4822 117 10052	MF RESISTOR 0.39Ω,1W
R906	4822 116 81679	RESISTOR 680Ω,1/10W
R908	4822 116 83141	OMF RESISTOR 68kΩ,2W
R909	4822 116 81653	RESISTOR 1.5kΩ,1/10W
R910	4822 116 81549	RESISTOR 820Ω,1/10W
R911	4822 116 81662	RESISTOR 220kΩ,1/10W
R951	4822 116 81738	RESISTOR 470Ω,1/10W
R955	4822 117 10425	OMF RESISTOR 2.2kΩ,2W
R957	! 4822 116 83202	FUSIBLE RESISTOR 100Ω,1/10W

! ... Safety component, use only this type

R963	4822 117 12338	RESISTOR 510Ω,1/10W
R964	4822 116 81738	RESISTOR 470Ω,1/10W
R970	4822 053 11249	OMF RESISTOR 24Ω,1W
R971	5322 116 54401	RESISTOR 390Ω,2W
R974	5322 116 54401	RESISTOR 390Ω,2W
R975	4822 116 81646	RESISTOR 10kΩ,1/10W
R1003	4822 116 81667	RESISTOR 330Ω,1/10W
R1004	4822 116 81545	RESISTOR 0Ω,1/10W
R1005	4822 116 81646	RESISTOR 10kΩ,1/10W
R1006	4822 116 81676	RESISTOR 560Ω,1/10W
R1007	4822 116 81661	RESISTOR 22kΩ,1/10W
R1008	4822 116 81654	RESISTOR 15kΩ,1/10W
R1009	4822 116 81646	RESISTOR 10kΩ,1/10W
R1010	4822 116 81651	RESISTOR 12kΩ,1/10W
R1012	4822 116 81545	RESISTOR 0Ω,1/10W
R1016	4822 116 81645	RESISTOR 1kΩ,1/10W
R1021	4822 116 81738	RESISTOR 470Ω,1/10W
R1022	4822 116 81647	RESISTOR 100kΩ,1/10W
R1023	4822 116 81646	RESISTOR 10kΩ,1/10W
R1024	4822 116 81681	RESISTOR 6.8kΩ,1/10W
R1037	4822 116 81677	RESISTOR 5.6kΩ,1/10W
R1038	4822 116 81653	RESISTOR 1.5kΩ,1/10W
R1101	4822 116 81659	RESISTOR 2.2kΩ,1/10W
R1102	4822 116 81661	RESISTOR 22kΩ,1/10W
R1105	4822 116 81647	RESISTOR 100kΩ,1/10W
R1106	4822 116 81545	RESISTOR 0Ω,1/10W
R1107	4822 116 81536	RESISTOR 1kΩ,1/6W
R1109	4822 116 81536	RESISTOR 1kΩ,1/6W
R1110	4822 116 81738	RESISTOR 470Ω,1/10W
R1111	4822 116 81738	RESISTOR 470Ω,1/10W
R1112	4822 116 81654	RESISTOR 15kΩ,1/10W
R1113	4822 116 81545	RESISTOR 0Ω,1/10W
R1115	4822 116 81545	RESISTOR 0Ω,1/10W
R1118	4822 116 81536	RESISTOR 1kΩ,1/6W
R1119	4822 116 81645	RESISTOR 1kΩ,1/10W
R1120	4822 116 81645	RESISTOR, 1K, VR397/55 VR597/55
R1121	4822 116 81646	RESISTOR 10kΩ,1/10W
R1122	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R1125	4822 116 81641	RESISTOR 4.7kΩ,1/6W
R1126	4822 116 81646	RESISTOR 10kΩ,1/10W
R1201	4822 116 81646	RESISTOR 10kΩ,1/10W
R1202	4822 116 81646	RESISTOR 10kΩ,1/10W
R1203	4822 116 81646	RESISTOR 10kΩ,1/10W
R1204	4822 116 81646	RESISTOR 10kΩ,1/10W
R1205	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R1206	4822 116 81645	RESISTOR 1kΩ,1/10W
R1207	4822 116 81738	RESISTOR 470Ω,1/10W
R1208	4822 116 81678	RESISTOR 56kΩ,1/10W
R1209	4822 116 81646	RESISTOR 10kΩ,1/10W
R1210	4822 116 81646	RESISTOR 10kΩ,1/10W
R1211	4822 116 81646	RESISTOR 10kΩ,1/10W
R1212	4822 116 81674	RESISTOR 4.7kΩ,1/10W
R1220	4822 116 81667	RESISTOR 330Ω,1/10W
R1221	4822 116 81669	RESISTOR 33kΩ,1/10W
R1222	4822 116 81638	RESISTOR 33kΩ,1/6W
R1223	4822 116 81669	RESISTOR 33kΩ,1/10W
R1224	4822 116 81669	RESISTOR 33kΩ,1/10W
R1301	4822 116 81671	RESISTOR 3.9kΩ,1/10W
R1307	4822 116 81646	RESISTOR 10kΩ,1/10W
R1308	4822 116 81646	RESISTOR 10kΩ,1/10W
R1309	4822 116 81646	RESISTOR 10kΩ,1/10W
R1401	4822 116 81675	RESISTOR 47kΩ,1/10W
R1402	4822 116 81645	RESISTOR 1kΩ,1/10W
R1403	4822 111 41576	RESISTOR 330Ω,1/2W

CAPACITORS

C3	4822 126 10496	CAPACITOR 0.1µF,25V
C4	4822 126 12382	CAPACITOR 0.01µF,50V
C5	4822 126 12382	CAP,VR297/55 VR397/55
	4822 126 11402	CAP,VR497/55 VR597/55
C6	4822 124 81252	E CAPACITOR 10µF,16V
C7	4822 126 10072	CAPACITOR 0.01µF,50V
C9	4822 124 11738	E CAPACITOR 47µF,6.3V
C10	4822 126 12797	CAPACITOR 0.1µF,16V
C11	4822 124 11734	E CAPACITOR 3.3µF,50V
C12	4822 124 81294	E CAPACITOR 2.2µF,50V
C13	4822 126 10496	CAPACITOR 0.1µF,25V
C14	4822 126 13427	CAPACITOR 150pF,16V
C15	4822 126 12469	CAPACITOR 56pF,16V
C16	4822 124 81294	E CAPACITOR 2.2µF,50V
C17	4822 124 11735	E CAPACITOR 0.47µF,50V
C18	4822 122 90043	CAPACITOR 0.022µF,25V
C19	4822 126 10496	CAPACITOR 0.1µF,25V
C20	4822 126 11403	CAPACITOR 0.033µF,25V
C21	4822 126 10072	CAPACITOR 0.01µF,50V
C22	4822 126 10496	CAPACITOR 0.1µF,25V
C23	4822 124 11738	E CAPACITOR 47µF,6.3V
C24	4822 126 10496	CAPACITOR 0.1µF,25V
C25	4822 124 11734	E CAPACITOR 3.3µF,50V
C26	4822 124 81252	E CAPACITOR 10µF,16V
C27	4822 124 10877	E CAPACITOR 10µF,16V
C28	4822 126 10072	CAPACITOR 0.01µF,50V
C29	4822 124 81252	E CAPACITOR 10µF,16V
C30	4822 124 11736	E CAPACITOR 0.1µF,50V
C31	4822 126 10496	CAPACITOR 0.1µF,25V
C32	4822 124 11734	E CAPACITOR 3.3µF,50V
C34	4822 126 12459	CAPACITOR 0.047µF,25V
C35	4822 126 13973	CAPACITOR 0.22µF,16V
C36	4822 126 13429	CAPACITOR 47pF,16V
C37	4822 126 10496	CAPACITOR 0.1µF,25V
C38	4822 126 13427	CAPACITOR 150pF,16V
C39	4822 126 10496	CAPACITOR 0.1µF,25V
C41	4822 126 10072	CAPACITOR 0.01µF,50V
C42	4822 126 12382	CAPACITOR 0.01µF,50V
C43	4822 126 10496	CAPACITOR 0.1µF,25V
C44	4822 124 11738	E CAPACITOR 47µF,6.3V
C45	4822 126 10496	CAPACITOR 0.1µF,25V
C47	4822 124 11739	E CAPACITOR 47µF,16V
C48	4822 124 42276	E CAPACITOR 470µF,6.3V
C49	4822 126 12382	CAPACITOR 0.01µF,50V
C53	4822 126 10873	CAPACITOR 180pF,16V
C54	4822 124 81253	E CAPACITOR 1µF,50V
C56	4822 126 13968	CAPACITOR 7pF,16V
C57	4822 126 13968	CAPACITOR 7pF,16V
C59	4822 126 13747	CAPACITOR 68pF,16V
C61	4822 126 12387	CAPACITOR 4pF,16V
C63	4822 126 13598	CAPACITOR 330pF,50V
C80	4822 126 12382	CAPACITOR 0.01µF,50V
C82	4822 126 13969	CAPACITOR 10pF,16V
C84	4822 126 14168	CAP 0.012µ, VR497/55 VR597/55
C89	4822 126 12469	CAPACITOR 56pF,16V
C92	4822 126 12382	CAPACITOR 0.01µF,50V
C101	4822 126 10072	CAPACITOR 0.01µF,50V
C103	4822 126 12382	CAPACITOR 0.01µF,50V
C104	4822 126 10072	CAPACITOR 0.01µF,50V
C105	4822 126 10072	CAPACITOR 0.01µF,50V
C106	4822 126 10496	CAPACITOR 0.1µF,25V
C107	4822 126 10496	CAPACITOR 0.1µF,25V
C108	4822 126 10072	CAPACITOR 0.01µF,50V
C109	4822 124 11739	E CAPACITOR 47µF,16V
C113	4822 126 10072	CAPACITOR 0.01µF,50V
C114	4822 126 10496	CAPACITOR 0.1µF,25V
C115	4822 126 10072	CAPACITOR 0.01µF,50V
C117	4822 126 10496	CAP,VR497/55 VR597/55
C118	4822 126 10072	CAP,VR497/55 VR597/55
C119	4822 126 10496	CAP,VR497/55 VR597/55
C120	4822 126 10496	CAPACITOR 0.1µF,25V
C123	4822 126 10496	CAPACITOR 0.1µF,25V
C126	4822 126 10872	CAPACITOR 100pF,16V
C128	4822 126 13746	CAPACITOR 330pF,16V
C301	4822 124 81253	E CAPACITOR 1µF,50V
C302	4822 121 70194	F CAPACITOR 0.012µF,50V
C303	4822 121 70208	F CAPACITOR 0.022µF,50V
C304	4822 121 51656	F CAPACITOR 0.0047µF,50
C306	4822 126 10076	CAPACITOR 0.0022µF,50V
C307	4822 124 81293	E CAPACITOR 4.7µF,25V
C308	4822 124 11741	E CAPACITOR 22µF,6.3V
C309	4822 126 10075	CAPACITOR 0.015µF,50V
C310	4822 124 81293	E CAPACITOR 4.7µF,25V
C311	4822 122 90076	CAPACITOR 0.033µF,50V
C312	4822 122 90076	CAPACITOR 0.033µF,50V
C313	4822 124 81253	E CAPACITOR 1µF,50V
C314	4822 126 13964	CAPACITOR 0.0018µF,50V
C315	4822 124 81252	E CAPACITOR 10µF,16V
C316	4822 126 13263	CAPACITOR 0.047µF,16V
C317	4822 124 81205	E CAPACITOR 100µF,16V
C331	4822 122 90043	CAPACITOR 0.022µF,25V
C332	4822 126 10045	CAPACITOR 0.0047µF,50V
C333	4822 124 81252	E CAPACITOR 10µF,16V
C334	4822 126 13598	CAPACITOR 330pF,50V
C335	4822 121 70195	F CAPACITOR 0.082µF,50V
C701	4822 126 10496	CAPACITOR 0.1µF,25V

! ... Safety component, use only this type

C702	4822 126 10072	CAPACITOR 0.01µF,50V
C703	4822 124 81252	E CAPACITOR 10µF,16V
C707	4822 124 81252	E CAPACITOR 10µF,16V
C708	4822 126 10072	CAPACITOR 0.01µF,50V
C709	4822 126 10072	CAPACITOR 0.01µF,50V
C718	4822 126 12459	CAPACITOR 0.047µF,25V
C721	4822 124 12013	E CAPACITOR 220µF,6.3V
C722	4822 126 10072	CAPACITOR 0.01µF,50V
C724	4822 126 10496	CAPACITOR 0.1µF,25V
C725	4822 126 10072	CAPACITOR 0.01µF,50V
C728	4822 126 10122	CAPACITOR 18pF,16V
C729	4822 126 13969	CAPACITOR 10pF,16V
C730	4822 125 11077	TRIM CAPACITOR
C732	4822 126 10125	CAPACITOR 33pF,16V
C733	4822 126 10072	CAPACITOR 0.01µF,50V
C734	4822 124 81252	E CAPACITOR 10µF,16V
C736	4822 124 81256	E CAPACITOR 2200µF,6.3V
C737	4822 124 11738	E CAPACITOR 47µF,6.3V
C738	4822 126 10072	CAPACITOR 0.01µF,50V
C901	! 4822 121 10675	F CAPACITOR 0.068µF
C904	! 4822 126 14135	CAPACITOR 100pF
C906	4822 124 23287	E CAPACITOR 1µF,50V
C907	4822 126 12905	CAPACITOR 100pF,1kV
C908	4822 121 43972	F CAPACITOR 0.1µF,50V
C910	4822 124 80298	E CAPACITOR 82µF
C911	! 4822 126 14039	CAPACITOR 0.0022µF
C915	4822 121 70419	F CAPACITOR 0.018µF,50V
C916	4822 126 11599	CAPACITOR 270pF,50V
C917	4822 124 11223	CAPACITOR 0.0047µF,1kV
C951	4822 124 12015	E CAPACITOR 220µF,6.3V
C953	4822 124 12016	E CAPACITOR 680µF,10V
C954	4822 124 12017	E CAPACITOR 820µF,16V
C959	4822 124 40248	E CAPACITOR 10µF,63V
C960	4822 124 23851	E CAPACITOR 10µF,50V
C961	4822 126 12382	CAPACITOR 0.01µF,50V
C963	4822 124 12015	E CAPACITOR 220µF,6.3V
C964	4822 124 11742	E CAPACITOR 22µF,16V
C965	4822 124 80384	E CAPACITOR 100µF,10V
C966	4822 124 23851	E CAPACITOR 10µF,50V
C967	4822 124 42285	E CAPACITOR 100µF,16V
C971	4822 124 80302	E CAPACITOR 220µF,10V
C972	4822 124 80307	E CAPACITOR 220µF,16V
C973	4822 121 10554	F CAPACITOR 0.018µF,50V
C1003	4822 124 23851	E CAPACITOR 10µF,50V
C1005	4822 122 90043	CAPACITOR 0.022µF,25V
C1006	4822 124 23852	E CAPACITOR 2.2µF,50V
C1007	4822 126 13263	CAPACITOR 0.047µF,16V
C1011	4822 126 10496	CAPACITOR 0.1µF,25V
C1013	4822 126 10126	CAPACITOR 470pF,16V
C1101	4822 126 10496	CAPACITOR 0.1µF,25V
C1102	4822 124 11833	E CAPACITOR 0.22µF,50V
C1104	4822 124 80781	E CAPACITOR 22µF,16V
C1107	4822 126 10042	CAPACITOR 0.027µF,25V
C1108	4822 124 10877	E CAPACITOR 10µF,16V
C1109	4822 126 10071	CAPACITOR 0.001µF,50V
C1112	4822 126 13056	CAPACITOR 0.056µF,50V
C1113	4822 126 10071	CAPACITOR 0.001µF,50V
C1114	4822 126 10872	CAPACITOR 100pF,16V
C1115	4822 126 10872	CAPACITOR 100pF,16V
C1116	4822 124 11738	E CAPACITOR 47µF,6.3V
C1117	4822 126 10072	CAPACITOR 0.01µF,50V
C1119	4822 126 12797	CAPACITOR 0.1µF,16V
C1201	4822 124 23846	E CAPACITOR 47µF,16V
C1202	4822 126 10496	CAPACITOR 0.1µF,25V
C1203	4822 124 80659	E CAPACITOR 220µF,6.3V
C1204	4822 126 13429	CAPACITOR 47pF,16V
C1205	4822 126 10125	CAPACITOR 33pF,16V
C1206	4822 124 23851	E CAPACITOR 10µF,50V
C1207	4822 126 11689	CAPACITOR 0.001µF,50V
C1210	4822 126 13656	CAPACITOR 0.1µF,50V
C1301	4822 124 81253	E CAPACITOR 1µF,50V
C1302	4822 126 10127	CAPACITOR 82pF,16V
C1303	4822 124 81253	E CAPACITOR 1µF,50V
C1304	4822 126 12469	CAPACITOR 56pF,16V
C1305	4822 124 11738	E CAPACITOR 47µF,6.3V
C1306	4822 126 10072	CAPACITOR 0.01µF,50V
C1307	4822 126 10039	CAPACITOR 0.01µF,16V
C1308	4822 126 10125	CAPACITOR 33pF,16V
C1309	4822 126 10125	CAPACITOR 33pF,16V
C1320	4822 126 12382	CAPACITOR 0.01µF,50V

COILS

L1	4822 157 11281	COIL 2.2µH
L2	4822 157 11282	COIL 12µH
L3	4822 157 11354	COIL 10µH
L4	4822 157 11354	COIL 10µH
L5	4822 157 11334	COIL 68µH
L6	4822 157 11354	COIL 10µH
L7	4822 157 11361	COIL 220µH
L8	4822 157 11354	COIL 10µH
L9	4822 157 62381	COIL 68µH
L10	4822 157 62381	COIL 68µH
L11	4822 157 11355	COIL 33µH
L13	4822 157 11286	COIL,VR497/55 VR597/55 470µH
L19	4822 157 11356	COIL 150µH
L101	4822 157 11354	COIL 10µH
L301	4822 157 63399	COIL 12mH
L951	4822 157 11287	COIL
L953	4822 157 11287	COIL
L954	! 4822 157 60104	COIL 100µH
L1201	4822 157 11357	COIL 330µH
L1301	4822 157 11354	COIL 10µH
L1302	4822 157 11288	COIL 22µH
L1303	4822 157 11288	COIL 22µH
L1305	4822 157 11355	COIL 33µH
LF901	!4822 157 11291	LINE FILTER

CRYSTAL RESONATORS

X1	4822 242 10591	CRYSTAL RESONATOR
X2	4822 242 10592	CRYSTAL RESONATOR
X701	4822 242 10788	CRYSTAL RESONATOR
X702	4822 242 71894	CRYSTAL RESONATOR

SWITCHES

S1	4822 276 13529	TACT SWITCH,POWER
S2	4822 276 13529	TACT SWITCH,EJECT
S3	4822 276 13529	TACT SWITCH,COLOR SYSTEM
S4	4822 276 13529	TACT SWITCH,CH- VR397/55
S5	4822 276 13529	TACT SWITCH,REC VR297/55
S6	4822 276 13529	TACT SWITCH,CH+ VR397/55
S8	4822 276 13529	TACT SWITCH,CH- VR297/55
S10	4822 276 13529	TACT SWITCH,CH+ VR297/55
S11	4822 276 13529	TACT SWITCH,REW
S12	4822 276 13529	TACT SWITCH,STOP VR397/55
S13	4822 276 13529	TACT SWITCH,PLAY VR297/55
S14	4822 276 13529	TACT SWITCH,STOP VR297/55
	4822 276 13529	TACT SWITCH,PLAY VR397, VR597
S15	4822 276 13529	TACT SWITCH,FF
S16	4822 276 13529	TACT SWITCH,COLOR SYSTEM
S701	4822 276 13623	PUSH SWITCH,CASSETTE IN SW
S702	4822 276 13432	PUSH SWITCH,REC SAFETY SW

FERRITE BEAD

K901	4822 158 60653	FERRITE BEAD

PHOTO SENSORS

PC901	! 4822 130 10431	PC123F2
PS701	4822 209 15614	IC(PHOTO SENSOR)
PS702	4822 209 15614	IC(PHOTO SENSOR)

TRANSFORMERS & JACKS

T301	4822 148 81344	OSC TRANSFORMER
T901	! 4822 146 10803	SW TRANSF
T1001	4822 157 11358	LC TRAP
HD1	4822 256 10247	HOLDER(FDP)
HS1	! 4822 255 41286	HEAT SINK
J1	4822 265 10639	PIN JACK,A/V OUT VR297/55,VR497
J2	4822 265 10627	PIN JACK(SW),A/V IN VR297,VR497
J1201	4822 265 10628	PIN JACK(SW),VIDEO IN 397,497,597
J1203	4822 265 10629	PIN JACK(SW),AUDIO IN 397,497,597

! ... Safety component, use only this type

TERMINAL BOARD

TB1 ! 4822 426 10511 TERMINAL BOARD,VR297/55 VR497
! 4822 426 10512 TERMINAL BOARD,VR397/55 VR597
W45 4822 116 81545 RESISTOR 0Ω,1/10W
W46 4822 116 81545 RESISTOR 0Ω,1/10W
W47 4822 116 81545 RESISTOR 0Ω,1/10W
W48 4822 116 81545 RESISTOR 0Ω,1/10W
W49 4822 116 81545 RESISTOR 0Ω,1/10W
W50 4822 116 81545 RESISTOR 0Ω,1/10W
W51 4822 116 81545 RESISTOR 0Ω,1/10W
W52 4822 116 81545 RESISTOR 0Ω,1/10W
W53 4822 116 81545 RESISTOR 0Ω,1/10W
W54 4822 116 81545 RESISTOR 0Ω,1/10W

TUNER AND I.F. UNIT

TU1001 !4822 210 10778 TUNER
UN1001 4822 214 12407 IF UNIT

FUSE CLIPS

FC901 ! 4822 256 92131 FUSE CLIP
FC902 ! 4822 256 92131 FUSE CLIP

OTHERS

OT1 4822 265 41535 SHORT PIN,CN707
OT2 4822 502 30597 SCREW,HEAT SINK
DI1201 4822 130 10961 QLF0006-001

SHIELD PLATES

SD1 4822 441 12016 SHIELD CASE
SD2 4822 466 11644 SHIELD PLATE

WIRE

FW1201 4822 323 10407 PARALLEL WIRE,LED VR397/55

CONNECTORS

CN1 4822 265 10631 CONN,(1-6)DRUM VR497/55 VR597
4822 265 11039 CONN,(3-6)DRUM VR297/55 VR397

CONNECTORS

CN301 4822 321 63039 WIRE,A/C HEAD VR297/55 VR497/55
4822 265 41445 CONNECTOR,(1-7)A/C HEAD VR397
CN302 4822 320 11952 PARALLEL WIRE,FE HEAD
CN701 4822 265 41526 CONNECTOR,(1-8)CAP MDA
CN702 4822 265 31291 CONNECTOR,(1-5)ROTARY ENCODER
CN703 4822 265 20646 CONNECTOR,(1-2)LOADING MOTOR
CN704 4822 265 10633 FFC CONNECTOR,DRUM MDA
CN707 4822 265 51393 PIN HEADER,(1-2)BACK UP
CN901 !4822 267 31776 CONNECTOR,AC IN
CN1401 4822 265 11041 CONNECTOR,(1-10)PERE21 VR397/55
CP701 ! 4822 209 63612 ICP-N25
CP702 ! 4822 209 63612 ICP-N25
CP1101! 5322 157 53342 ICP-N15

FUSE

F901 ! 4822 070 31252 FUSE T1.2A

5. AUDIO/CONTROL HEAD BOARD ASSY <12>

PW1 4822 214 12312 A/CTL HEAD BOARD ASSEMBLY

CONNECTOR

CN1 4822 267 70336 CONNECTOR,(1-7)MAIN

6. LED BOARD ASSEMBLY(VR397/55,VR597/55)

PCB

PW2 4822 214 12392 LED BOARD ASSY
D1211 4822 130 10433 SLR-342VC3F
HD1 4822 256 10369 LED HOLDER,D1211
R62 4822 116 81545 RESISTOR 0Ω,1/10W

7. TERMINAL BOARD ASSY VR397/55,VR597/55

PW1 4822 214 12393 TERM.2 BOARD ASSY

RESISTORS

R1401 4822 050 16802 RESISTOR 6.8kW,1/6W
R1402 4822 050 16802 RESISTOR 6.8kW,1/6W
R1406 4822 157 71864 BUS WIRE

CAPACITOR

C1403 4822 126 11689 CAPACITOR 0.001μF,50V

BUS WIRES

L1401 4822 157 71864 BUS WIRE
L1402 4822 157 71864 BUS WIRE
L1403 4822 157 62371 COIL 1μH
L1405 4822 157 71864 BUS WIRE
L1411 4822 157 71864 BUS WIRE
L1412 4822 157 71864 BUS WIRE
L1413 4822 157 71864 BUS WIRE
J1401 4822 267 60386 RGB21PIN SOCKET, AV1

CONNECTORS

CN14014822 265 11042 CONNECTOR,(1-10)MAIN

OTHERS

OT1 4822 502 30731 SCREW,X2 PERI21
OT2 4822 502 30731 SCREW,X2 TERMINAL

! ... Safety component, use only this type